AIR CONDITIONING & REFRIGERATION NEWS

The Newspaper of the Industry

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Gags of the Week
Verse of the Week
Case of the Cigarette Lighter Surplus
The Gift Problem
Speaking of Surveys
Like to Read Other People's Mail?

Stories of the Week

"You say you can't diagnose my case, Doctor?"

"Not precisely, Mr. Salesman. But I can say this. If you were a building you'd be condemned."

"Would you be kind enough to help a poor man get something to eat, sir?

"Outside of this gun in my hand I don't own a thing in this world."

President to advertising manager: "Your reduced ad budget for our past fiscal year cut our expenses 50%, our profits 75%, and your salary 100%."—*Animator.*

Gags of the Week

She looks so good in a sweater that she pulls men's eyes over her wool.

Sometimes when a man recalls the good old days, he's really thinking of his bad young days.—MAURICE SEITTER.

Verse of the Week

Concerning the sexes,
Here is the snapper:
Man is the hunter;
Woman, the trapper.

Case of the Cigarette Lighter Surplus

After a recent press preview of a new product line several business paper editors, magazine editors, and business writers for daily newspapers were kicking the gong around. Somebody brought up the matter of that cigarette lighter manufacturer who is in trouble with Uncle Whiskers because he was reporting "only" $450,000 annual income instead of half a million per year.

"Yeah," interposed a writer, "and I know how he made all that money. I never paid a dime for one, I never use one, yet I have a drawer full of them. Can't even pawn 'em, because they all are engraved with advertising for the manufacturers who gave 'em to me."

Others present reported similar experiences. "Two years ago at Christmas I received 19

(Concluded on Page 12, Col. 1)

U.S. Cuts Home Down Payment To Up Building

WASHINGTON, D. C.—Two moves have been taken by the government to bolster the nation's faltering home building industry.

The Administration lowered down payment requirements for mortgages insured by the Federal Housing Administration. It also gave savings and loan associations greater freedom to invest in mortgages outside their normal territory.

At the same time, a House Banking subcommittee voted for housing-law changes that would give veterans more liberal terms than non-veterans on FHA mortgage insurance.

(Concluded on Page 4, Col. 1)

Nelson Calls For Warm Air Dealer Group

By George M. Hanning

E. LANSING, Mich.—A call for a national Association of forced warm air heating dealers "to work side by side with other associations for the purpose of upgrading the quality of heating installations" was issued here recently by Randall A. Nelson, director of public relations for the National Warm Air Heating and Air Conditioning Association.

Nelson made his proposal before a group of more than 100 Great Lakes area dealers attending a short course on heating and air conditioning, sponsored by NWAHACA, at Michigan State university.

While NWAHACA has always had and welcomes dealer members, Nelson pointed out, it is basically a manufacturers' association. Dealers would be able to handle their particular problems better through an organization of their own, he urged.

(Concluded on Back Page, Col. 2)

Experts Appraise Appliance Cutbacks, Price Slash Rumors

DETROIT—What's the meaning behind the rash of production cutbacks, temporary plant shutdowns, and rumors of price slashes in the household refrigerator and major appliance industry, that have been in the news spotlight in the past 10 days?

Some interpret the situation to mean that the appliance market has gone real "soft." Others say that it is a reflection of a pricing situation. There are others of the opinion that there is more plant capacity for producing appliances than is needed to meet current demands, combined with a tendency to try to utilize this capacity to its fullest.

To get some authoritative opinion on the current picture in the appliance field, the NEWS asked veteran appliance manufacturing sales executives to comment on various phases of the situation, with the following results:

Question: Is there a particular or unusual "softness" in the appliance market right now?

Answer: "Retail sales of refrigerators in particular, and to a lesser degree on major appliances generally, may be off somewhat from what is considered normal for this time of year. But sales are always slow at this time of year, and there have been special problems in

(Concluded on Page 43, Col. 1)

Fedders Plans Fall Heat Pump Room, Central Unit Sale

NEW YORK CITY—Plans to market new lines of room and central air conditioners, incorporating the reverse cycle or heat pump concept next fall, were revealed by Salvatore Giordano, president of Fedders-Quigan Corp. at a recent meeting of the New York Society of Security Analysts.

He stated that previous models of window heat pumps were unsatisfactory because the refrigeration coil was inclined to frost at 40° F. or below, when accompanied by high humidity, making the system inoperative.

For this reason, distribution of these units has been confined to certain areas in the south.

Giordano asserted that new developments in design would eliminate many of the limita-

(Concluded on Page 4, Col. 5)

Carrier Ups Long, Lake In Sales

SYRACUSE, N. Y. — Promotion of two top sales executives in Carrier Corp.'s Unitary Equipment Div. following the retirement of John M. Bickel, vice president and general sales manager, (see story on page 41) was announced last week by Russell H. Gray, vice president and divisional general manager.

George T. Long has been named director of marketing with responsibility for sales planning and other divisional home office activities allied with sales operations.

William A. Lake will take the post of sales manager and will

(Concluded on Back Page, Col. 4)

Colonial Tests Outdoor Vendors

DURHAM, N. C. — Outdoor food vending machines are currently being tested here by Colonial Stores, in what may be the first such installation in the South.

The six machines, offering round-the-clock shopping, are installed in the parking lot of the Colonial Store at 1116 N. Broad St. They are stocked with 32 different kinds of foods, including milk, eggs, coffee, tea, three kinds of meats, bread, cake rolls, soft drinks, soup, and other canned foods.

The machines were built at a

(Concluded on Back Page, Col. 1)

GSA Tells 7-Yr. Plan To Cool U. S. Buildings

To Spend $42 Million In Fiscal '58 as Part of $328 Million Renovation

WASHINGTON, D. C. — The General Services Administration is planning to spend $41,850,000 for air conditioning of Federal buildings in the year starting July 1 as part of a long-range building modernization project.

This expenditure would pay for the first full year of a seven-year air conditioning program to cost $328,000,000, it was reported.

In testimony on the agency's air conditioning plans for the next fiscal year, GSA officials pointed out to the House Appropriations subcommittee that air conditioning is virtually a "must" in private industry in order to keep personnel.

In private industry "you could hardly engage a stenographer or anybody to work in a building unless it is air conditioned," they told the subcommittee.

Under its building renovation program for fiscal 1958, GSA plans to use $18,959,400 for year-round air conditioning systems, $15,386,800 for low-velocity duct systems, $5,578,100 for another low-velocity duct system, and $1,925,700 for packaged units.

The necessity of the agency's air conditioning program was

(Concluded on Page 11, Col. 1)

Dallas Tornado Hits Only Dearborn Stove

DALLAS — Early reports on the damage from the tornado which struck here showed that manufacturers and distributors of air conditioning and refrigeration equipment, with the exception of the Dearborn Stove Co., had generally escaped major damage.

71 Big Buildings Cooled In N. Y. To Lead Nation, Survey Shows

SYRACUSE, N. Y. — New York City, the "big building capital," is leading the nation toward completely air conditioned cities, according to a survey released by Carrier Corp.

Since the end of World War II, some 71 large multi-story buildings providing 22,840,000 sq. ft. of air conditioned space have been built in Manhattan, Carrier said.

"This has touched off what is today the air conditioning industry's greatest market—installations in older buildings," the company stated. "Within only the last four years some 24 major existing New York skyscrapers have installed year-round central systems.

"The combined cooling capacity that has gone into service in these New York office buildings since the war is some 110,000 tons."

Charles V. Fenn, vice president of the Machinery & Systems Div., claimed that Carrier alone has supplied equipment for air conditioning about 50% of such total new building requirements and approximately two thirds of the modernized existing building space.

In addition, Fenn stated that nearly 20 other new buildings—

(Concluded on Page 4, Col. 4)

BEHIND PAGE ONE . . .

Freezer-Refrigerators
Survey Indicates Rapid Acceptance Even In Lower Income Groups 13

Ending Furnace Pulsations
Research Aimed at Eliminating Annoying, Damaging Problem In Residential Systems 14

Pharmacy Refrigeration
Reach-Ins, Walk-Ins Save Money Boost Efficiency of Professional Pharmacy 17

ARI Prepares Several New Standards .. 18

Selling for Profit
Answering the Argument That Home Air Conditioning Is a Luxury 34

Corrosion
Chemist Chemical Corrosion as It Affects Refrigeration Serviceman 36

Regular Features
Editorial ..... 20 Literature 29
What's New ..... 30 Patents 44

Cooling Tower Institute

Hoffmann Leads Officer Slate; Group To Issue Vapor Recirculation Study

PALO ALTO, Calif.—Paul R. Hoffmann of Lilie-Hoffmann Cooling Towers, Inc., St. Louis, has been elected president of the Cooling Tower Institute.

Hoffmann is president of his company and has served on the board of directors of the institute since 1950. He succeeds James P. Wiseman of the Fluor Products Co., Whittier, Calif.

Other officers elected for 1957 at the CTI board meeting were: Karl E. Johnson, vice president; Denis E. O'Neil, secretary; and Forrest B. Reed, treasurer.

Johnson is vice president and general manager of J. F. Pritchard & Co. of California with headquarters in Kansas City, Mo.

O'Neil is manager of the cooling tower department of Foster Wheeler Corp. with departmental headquarters in San Mateo, Calif.

Reed is manager of sales for The Marley Co. in Kansas City, Mo., with manufacturing plants in Stockton, Calif., Kansas City, and Louisville, Ky.

The Cooling Tower Institute is a national association of industrial water-cooling tower manufacturers. Headquarters for the organization are in Palo Alto. Raymond C. Kelly is executive manager.

Principal research projects sponsored by the group include field studies of operating cooling towers, investigations of lumber deterioration and wood maintenance and technical studies involved in the development of industry standards. The CTI field service department office in Houston, Texas is under the supervision of CTI field engineer James L. Willa.

Extensive field research during 1956 was conducted under the direction of Ennis C. Smith, CTI delegate of Hudson Engineering Corp., Houston, Texas. Determinations of the effect of vapor recirculation on tower performance were completed during the testing season. Results of the study are scheduled for publication during 1957.

CORRECTION

In the process of publishing our annual air conditioning equipment specifications which appeared in the March 18 issue, Western Auto Supply Co.'s room air conditioner model 6J1754 lost 3,000 B.t.u. of its capacity. The unit has 15,200 B.t.u. capacity rather than the 12,200 listed.

York-Shipley Plans Heating Expansion; Aims To Add Air Conditioning Firm Too

YORK, Pa.—Expansion plans of York-Shipley, Inc. here include the acquisition of companies both within and outside the heating industry, according to President S. H. Shipley.

"We desire to acquire several residential oil and gas equipment or component manufacturers in areas where we are not well represented, particularly in the middle west," said Shipley. "Also it is our aim to add an air conditioning manufacturing company.

"Outside the heating industry, we are interested in any company which will give us a diversification of products. Any acquired company must be a profitable operation with good management and the ability to carry on and expand quickly, given improved finances, and staff organizational assistance.

E. L. Shaffer, assistant to the president, has been placed in charge of the project of looking for and analyzing such companies.

York-Shipley makes automatic home heating and air conditioning equipment, commercial oil and gas burners, and packaged steam generators for commercial and industrial service in capacities from 10 to 600 hp.—low pressure for heating and high pressure for processing.

Technical Program To Highlight ASRE Meeting June 3-5

NEW YORK CITY—Featuring four technical sessions, three engineering conferences, and six industry forums, the American Society of Refrigerating Engineers will hold its 53rd annual meeting at the Hotel Fontainebleau, Miami Beach Fla., June 3-5.

Tentative technical program includes authoritative discussions of methods by which food preservation may be improved in home refrigerators, new principles for automatic defrosting, and compressors for aircraft.

Among other topics to be covered are: refrigeration techniques allied with extremely low temperatures, transfer rates from heated horizontal tubes, electrical insulation as related to the hermetic motor, and problems allied with capillary selection and flow phenomena.

There will be a research conference upon the mechanics and chemistry of hermetic systems, another upon ways to reduce residential heating and cooling costs, and a third on controls for household refrigerators and freezers.

Other planned activities include inspection trips, social events, and resort and beach entertainment. Among these is an evening get-together at the Fontainebleau on Monday, June 3.

Dairy Industries Group Re-Elects Crofts Chief

WASHINGTON, D. C.—Sidney E. Crofts, Batavia Body Co., Inc., was re-elected president of Dairy Industries Supply Association at its 38th annual meeting at the Shoreham hotel.

Also re-elected were DISA's vice president, D. G. Colony, Manton-Gaulin Mfg. Co., Inc., and the treasurer, Roy E. Cairns, Waukesha Foundry Co.

Re-elected also were the following members of the board of directors: R. E. Olson, Taylor Instrument Cos., director-at-large; R. O. Davison, Kelco Co., ingredients commodity director; and Lester Olsen, The Olsen Publishing Co., general commodities and services.

Newly elected were three members of the board: Fred W. Drenk, Robert A. Johnston Co., director-at-large; Sherman C. Little, Sr., Weber Showcase & Fixture Co., Inc., director-at-large for the western area; and G. R. Olson, Lincoln Equipment, Inc., as jobbers commodity director.

the hottest thing in LOW temperature

LOWEST in operating costs, too! Kramer's new "L" THERMOBANK saves important dollars every day it works for you. It's the only LOW temperature automatic hot gas defrost system that works trouble-free at any temperature level, from plus 32° to minus 75°. Let us prove that it costs less to own the best!

WRITE FOR MANUAL TV-320

KRAMER

THERMOBANK

KRAMER TRENTON COMPANY
Trenton 5, New Jersey

For more information about products advertised on this page use Information Center, page 31.

Artist's conception of all Bendix-Westinghouse plants placed in one common grouping—a modern industrial community employing thousands of people and embodying nearly a million square feet of floor space.

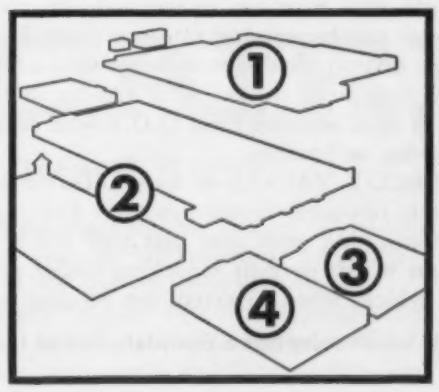
THE HOUSES THAT DEPENDABLE COMPRESSORS BUILT!

Over the past twenty-six years, Bendix-Westinghouse has built millions of compressors for the trucking industry. The same standards of quality that convinced those people our product was dependable are convincing refrigeration and air conditioning people that Bendix-Westinghouse refrigeration compressors possess a like dependability.

Here, at the Evansville Division, where our complete line of hermetics are built, we're practicing the same rigid quality control and manufacturing policies that have made our company a lasting success in the automotive field.

We would like the chance to tell you in detail the many painstaking steps we employ to assure the built-in dependability of every Bendix-Westinghouse compressor. Also, we'd welcome the opportunity to quote prices and delivery on our compressor line ranging in capacities from ¼ to 7½ H.P.

Write us for further information and a prompt visit from one of our regional managers. Evansville Division, Evansville 11, Indiana. *Export Sales:* BENDIX INTERNATIONAL, 205 E. 42nd Street, New York 17, New York.



1 Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio

2 Bendix-Westinghouse, Evansville Division, Evansville, Indiana

3 Bendix-Westinghouse, Berkeley, California

4 Bendix-Westinghouse, Oklahoma City, Oklahoma

EVANSVILLE DIVISION of

Bendix-Westinghouse

Automotive Air Brake Company

For more information about products advertised on this page use Information Center, page 31.

U. S. Lowers FHA Down Payment--

(Concluded from Page 1, Col. 2)

A bill was acted on which would liberalize Federal housing assistance to a greater extent than the Administration favors. It included a proposal to use $1 billion in GI life insurance funds to buy veterans' mortgages despite Administration threats to veto this.

The Administration's action on insured mortgages lowers the minimum down payment requirements for houses costing over $9,000 from 7 to 5% on the first $9,000 and from 27 to 25% on the amount over $9,000 to $20,000.

It is believed this smaller down payment will make it easier for low and middle income families to buy a house if they can get a mortgage loan. However, the reduction does not attack the shortage of mortgage credit, a prime factor in the decline of home building.

Housing starts fell last month to the lowest rate since 1951. Industry sources predict that starts will number less than 1 million this year.

Applications were received by the FHA to insure mortgages covering 12,202 new homes in February. This was an increase over January's 10,549 applications, but was considerably under the 18,507 received in February, 1956.

This was the second straight month in which FHA insurance applications registered an advance. Along with seasonal factors, the uptrend was aided by the increase last December to 5%, from 4½%, in the maximum interest rate on FHA-insured mortgages.

The Administration's action concerning savings and loan associations is expected to increase slightly the availability of credit. Associations insured by the government now will be permitted to put money into mortgage loans that other insured associations have made.

Whirlpool-Seeger Reports Birtman Merger Finalized

CHICAGO—Walter G. Seeger, chairman of the board of Whirlpool-Seeger Corp., announced that the proposed merger of Birtman Electric Co. into Whirlpool-Seeger had been approved by the stockholders of both corporations and that the merger was effective on April 1.

Officers and directors of Whirlpool-Seeger, of which Elisha Gray II is president, will continue as the officers and directors of the merged corporation, the name of which will be Whirlpool Corp.

N. Y. Leads In Air Conditioning--

(Concluded from Page 1, Col. 2)

all to be completely air conditioned and involving about 10,000,000 sq. ft. of space—are now on the drawing boards or in the initial stages of construction.

"The high level of new construction in New York has been a basic factor in motivating installation of year-round conditioning systems in existing office edifices all across the country," he declared.

The present distribution of Carrier business between new and existing multi-story building air conditioning nationwide is that for every new structure equipped at the time of erection, five systems are installed in existing buildings, it was pointed out.

"The fact is," Fenn noted, "that in order to remain in competition for first-class tenants, existing buildings have found it necessary to modernize by providing air conditioned space."

Also, firms with offices in new air conditioned structures in New York are demanding the same feature in the existing building space they occupy in other parts of the country where the availability of modern facilities is not so pronounced.

Air conditioning for existing office buildings has been the biggest source of contracts for large installations since it caught up with and overtook systems installed in new structures the latter part of 1952, he said.

Since then, both markets have continued to grow. During 1954, the volume of business for existing buildings was nearly triple that for new structures. The margin continued to increase and during 1956, reached the five to one proportion.

"Air conditioning of all major office buildings in the nation is simply inevitable over a period of years," the Carrier executive remarked.

"My best guess as to the time involved for this to take place is that it is likely to require a decade or longer." He estimated the nationwide potential volume of air conditioning in existing office buildings alone at above $3 billion.

According to Fenn, "when air conditioned office space reaches a level of about 18% of the total office area in a given city, the remainder of the buildings must then also air condition."

New York "hit this 'principle of saturation' mark three or four years ago," it was pointed out. "Chicago and Philadelphia swiftly followed."

Fedders Heat Pump--

(Concluded from Page 1, Col. 3)

tions of the heat pump. Included, is a new method of automatically defrosting coils. A thermostat that senses the temperature of the refrigerant reverses the cycle when coils begin to frost.

The new models will be able to operate most of the year in all parts of the country, according to Giordano.

"The heat pump represents a tremendous future," he said. "I envisage the day when the heat pump will obsolete all present conventional methods of heating."

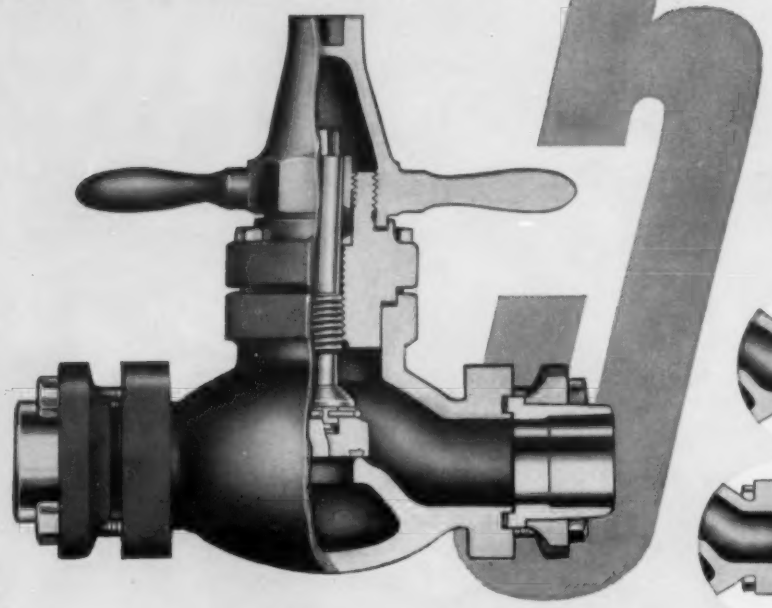
Giordano reported that both sales and earnings set records for both the quarter and the six months ending Feb. 28. Sales for the quarter were $21,901,768 and for the half-year $33,484,159. This compared with $17,966,839 and $23,850,667 for the like periods last year.

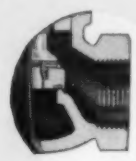
Net profit after taxes for the quarter rose from $906,090 last year to $1,185,798. For the six months the increase was from $729,335 to $1,373,979.

A new super-thin room air conditioner was shown at the New York meeting but Giordano stated it did not perform efficiently enough to be included in the 1957 line. The unit, rated at ¾ hp., measures 24 in. wide, 12 in. high, and 12¾ in. deep. At the present stage it produces 5,000 B.t.u. of cooling.

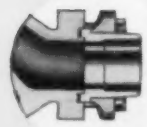
FIVE TYPES OF CONNECTIONS IN HENRY

SEMI-STEEL WING CAP VALVES



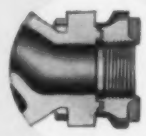


F.P.T.
In Valve Body
½" thru 2½"



O.D. Solder
Brass Adapter
and Steel Flange
1⅜" thru 5⅛"

Steel Butt Weld Adapter
and Steel Flange
1¼" thru 5"



One Piece F.P.T. Flange
1¼" thru 6"

One Piece Slip-on Weld Flange
1¼" thru 6"

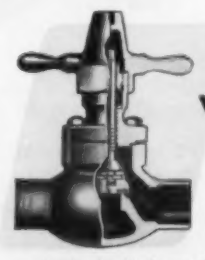
MAKE INSTALLATION EASY

Specify Henry Wing Cap Valves with their wide choice of end connections and your installation costs will always be low.

For example, steel pipe can be screwed directly into the valve body on sizes thru 2½", or it can be screwed into one piece F.P.T. flanges on sizes 1¼" thru 6". It can also be butt welded to separate steel adapters with companion flanges or used with one piece slip-on weld flanges in the same larger size range. If copper pipe is used, separate brass O.D. solder adapters with companion flanges permit soldering or brazing.

BRONZE BODY VALVES all have O.D. solder connections.

Henry offers you other features as well: Full capacity and unrestricted flow—patented self-aligning stem disc that will not rotate—resilient packing—back-seating design which permits repacking under pressure— a gasketed wing cap with socket which, when inverted, can be used to operate valve.



BRONZE ALLOY WING CAP VALVES

Made of bronze alloy to meet government specifications. Compact design—relatively light weight. Bolted bonnet construction and heavy wall bodies for maximum strength and safety. O.D. solder connections machined in valve body. Size range: ⅞" thru 4⅛" globe type; ⅞" thru 3⅛" angle type.

Your favorite wholesaler has a complete line of Henry Wing Cap Valves or can get them for you.

HENRY VALVE CO.
MELROSE PARK, ILLINOIS
(Chicago Suburb)
Cable: Hevalco, Melrose Park, Illinois
Valves, Driers, Strainers, Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications.

For more information about products advertised on this page use Information Center, page 31.

The curtain is going up on the greatest spring selling event in appliance history

The FRIGIDAIRE SHEER LOOK COLOR CARNIVAL OF VALUES

Month after month, the really BIG news comes from Frigidaire. Styling – Color – Merchandising – Bargains – you can count on Frigidaire.

This month's headline news is the *Sheer Look Color Carnival of Values*—the greatest spring selling drive even Frigidaire has ever launched.

Never before have so many fresh, exciting, action-making sales ideas been wrapped up in one promotion.

And the timing is perfect. Right at the height of the big selling season, 27 million families will see striking, full-color advertising in national magazines that launches the Color Carnival in high. They'll read about –

1 **Sensational Sheer Look Styling**—the new design concept that has snowballed into the No. 1 fashion news in the industry.

2 **Glamorous Sheer Look Colors—at NO extra charge. Color sells color! Color Attracts! Color sells color! Color sells white! And Frigidaire Gives Color Extra Sell-Appeal selling Sheer Look Colors at NO extra cost.**

3 **Fashion-first Charcoal Gray**—the exciting new color that goes with and enhances *any* color— the quick, easy way to turn "tired" kitchens into show places without costly remodeling.

4 **Gold Tag Specials—once-in-a-lifetime bargain values —on '57 Appliances**—Refrigerators, Ranges, Washers and Dryers. Terrific "buys" on the appliances folks want most, right when they're in the buying mood.

Any one of these 4 great selling themes is way out front. Rolled into one over-all selling drive, they're a 4-way selling blitz to roll up Sales—Volume— Profits for Frigidaire dealers.

Be first with

FRIGIDAIRE

Frigidaire Division of General Motors

Refrigerators • Electric Ranges • Washers and Dryers
Food Freezers • Dishwashers • Disposers
Water Heaters • Built-in Wall Ovens
Cooking Tops and Fold-Back Surface Units
Room and Central Air Conditioners
Dehumidifiers • Oil- and Gas-fired Furnaces

Upped Sales Cause Fraser & Johnston To Double Mfg. Space for Year-Round Line

SAN FRANCISCO — Floor space has been doubled for manufacturing operations of Fraser & Johnston Co. here to accommodate its increased business in sales of gas furnaces and air conditioning equipment.

An automated furnace and air conditioning production line is now being designed and will be set up in the newly-leased building under direction of Howard G. Cardiff, chief engineer of all Fraser & Johnston Co. operations in San Francisco and Denver.

The new building, acquired on a long-term lease, is directly across 17th St. from the Fraser & Johnston general offices which are located in the building housing its main plant.

I. S. "Irv" Fairbanks, manager of the air conditioning division, said new facilities in the building across the street will cost $200,000 and will be installed to facilitate production and economize on materials handling.

Air conditioning units are being manufactured in part of the main floor of the new location now, Fairbanks said. As Pacific Greyhound lines gradually remove bus repair depot operations to a new location, Fraser & Johnston Co. will move in and expand operations now being carried on in four scattered San Francisco locations.

Fairbanks said the new building lease gives Fraser & Johnston 80,000 additional sq. ft. of floor space.

ARI Recommends Governors Meeting To Study Air Conditioning Schools for 12-Month Utilization

WASHINGTON, D. C. — The Air-Conditioning & Refrigeration Institute has recommended that the National Conference of Governors, to be held in Williamsburg, Va., June 23 to 26, study air conditioning of the nation's schoolrooms to permit efficient full-time utilization of the multi-billion dollar school plan now in being.

Prompted by reports quoting Virginia's Governor Thomas B. Stanley, chairman of the Governor's Conference, that year-round utilization of school facilities would be one of the major topics before the conference, Geo. S. Jones, Jr., managing director of the ARI, wrote to Governor Stanley suggesting that " . . . Perhaps the air conditioning industry could be represented at the conference to explain how its facilities could help the States to meet their ever-increasing school problem."

Jones assured that the industry-wide organization would be happy to participate in any way, adding "I am sure that we can provide statistical data that would be of value in the consideration of this problem. . . ."

In his letter to the Virginia Governor, Jones pointed out that "the initial reason, as I understand it, for the summer 'vacation' from school was the belief the pupils . . . do not absorb knowledge when uncomfortably hot; also the fact that, many years ago, boys and girls were needed during the summer for help on the farm."

Pointing out that the latter reason has largely been outgrown, the ARI spokesman said that many businesses and factories have learned that air conditioning in summer makes workers as efficient in the hot months as in the cold months.

He noted that in many southern states, there is already a trend toward air conditioned schoolrooms, and that it has not only shown that pupils can do the schoolwork in hot weather, but that absenteeism has been cut to a considerable extent in air conditioned schools, even during spring and fall sessions.

Cooling Could Cut Cost Of School Construction

RICHMOND, Va.—Air conditioning as a means of cutting costs of school construction was suggested to Henrico county officials by Building Inspector John E. Colgin.

"I think it's worth a study," Colgin declared in a letter to the county manager, school superintendent, and members of the county school board and board of supervisors.

"Quite often the thing that appears to be out of the question and contrary to common sense is the very thing that will solve a problem," he wrote.

He said that windows should be eliminated. They furnish light and ventilation, he admitted, but they also contribute to "unbearable heat in the summer and tremendous loss of heat in the winter. They are costly to install and maintain."

Water Conditioning Meeting Due Apr. 16-17

NEW YORK CITY—A forum on promotion of water systems will be a top feature of the National Electrical Manufacturers Association water conditioning conference April 16-17 at the Nicollet hotel in Minneapolis, officials announced.

Opening at 1:30 p.m. April 16, the conclave will discuss problems in rural areas. Water supply, water systems, the right pump for the job, proper plumbing, and conditioning pond water for home uses are among the highlights. Others include promotion of such water using devices as electric water heaters, dishwashers, and food waste disposers.

Gelder V. Lewis, Kansas City, Mo. contractor representing the National Association of Plumbing Contractors will cover "Rural Plumbing Safeguards." The forum is the night of April 16.

Dr. R. M. Thomas, manager of national dealer sales, Water Conditioning Div., Rheem Mfg. Co. will discuss "Water Conditioning" the afternoon of April 16.

A post conference plumbing workshop for those who want additional technical assistance is an added feature, it was disclosed. The meeting closes at noon April 17 and the workshop begins at 1:30 that afternoon. A closing session of a Regional Farm Wiring Workshop the morning of April 16 is also at the Nicollet.

anco CONDENSER CLEANER

DISSOLVES SCALE FASTER

. . . AND HERE'S WHY

Anco Condenser Cleaner is simply dissolved in the sump while the system is in operation.

ANCO CONDENSER CLEANER removes scale from condenser tubes and water pipes quicker and slicker than any similar product. The secret is in special wetting agents which help the scale-dissolving chemicals bite into the scale faster. And with all its speedy-action, Anco is harmless to metals because it contains highly effective inhibitors.

You would expect to pay more for this superior product, but Anco Condenser Cleaner is actually priced lower than other leading brands.

Buy Anco. You'll like it better.

FREE

WATER TREATMENT MANUAL

A complete booklet on the control of scale, rust and algae in refrigeration and air conditioning systems. No service department should be without a copy. It's yours for the asking.

AVAILABLE WITH OR WITHOUT COLOR INDICATOR

Sold by wholesalers of air conditioning and refrigeration supplies

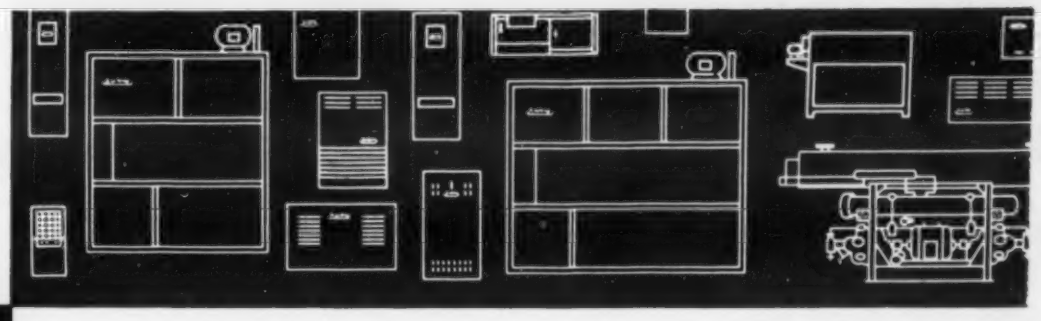
SPECIALISTS IN MAKING WATER BEHAVE

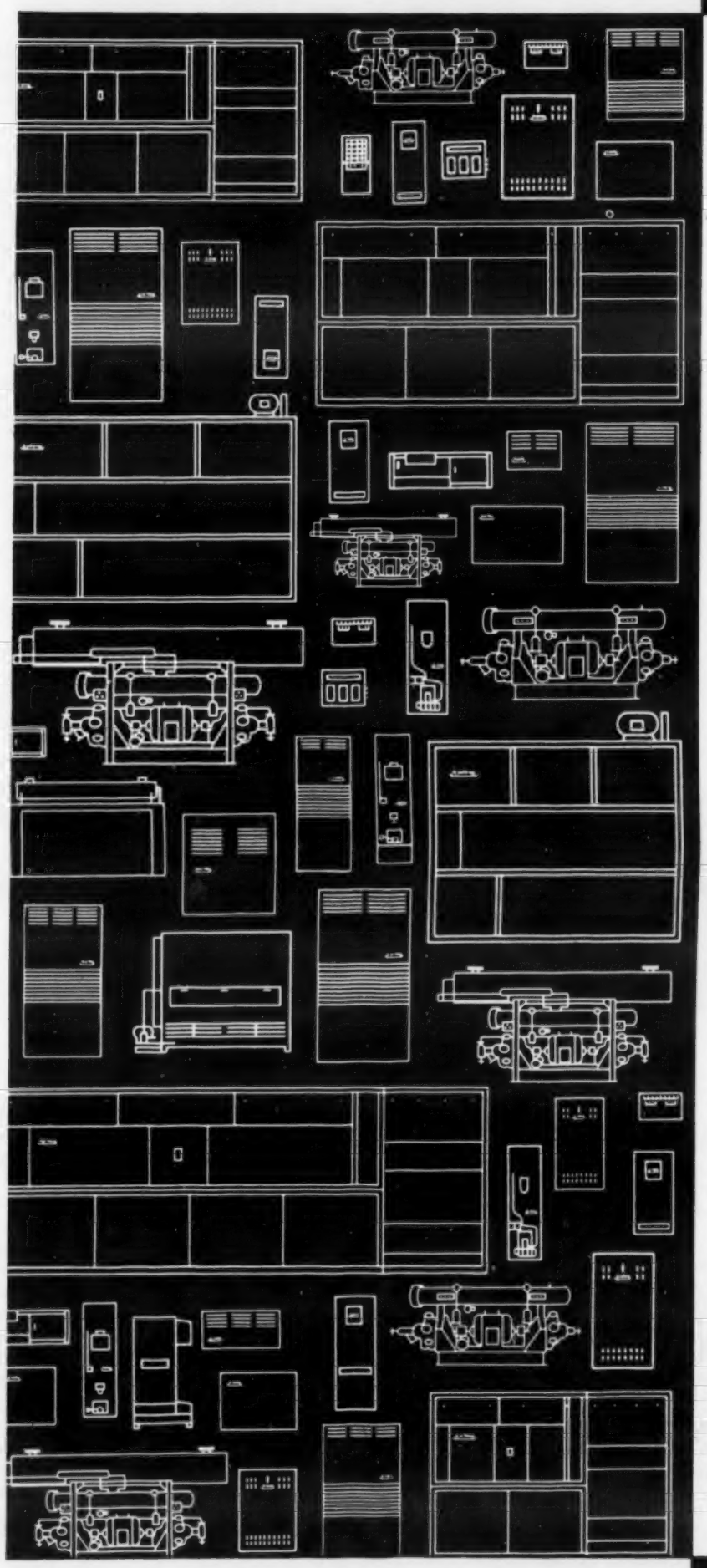
Anderson Chemical Company, INC.

Box 1424 • MACON, GEORGIA • Phone: 2-7962

For more information about products advertised on this page use Information Center, page 31.

Sweep Forward with **CHRYSLER**





OPPORTUNITY

knocks **286** different ways for **AIRTEMP DEALERS**

286 models—the most complete selection in the industry—enable AIRTEMP dealers to meet every home and business need.

Whether your customer wants superbly engineered heating or cooling—central systems . . . waterless or water-cooled "packaged" cooling . . . room air conditioners . . . furnaces alone or cooling added to present furnaces—Airtemp dealers have *Chrysler-engineered* equipment with which to make the sale!

The BIGGEST LINE in the industry . . .
Now Backed by the
BIGGEST AIRTEMP MERCHANDISING EVER!

Big full-page, *full-schedule* advertising in the top magazines! *PLUS* important, new prospect-getting campaigns—special promotions—and a whole array of other tested merchandising aids.

Airtemp DIVISION CHRYSLER CORP

A Specialized Division of CHRYSLER CORPORATION, Devoted Exclusively to AIR CONDITIONING

YOU, TOO...

can join the sweep *forward!* Mail this coupon today for details on Airtemp franchise opportunities!

AIRTEMP DIVISION, Chrysler Corporation
Dayton 1, Ohio

Gentlemen: Please rush full information on the Airtemp franchise!

NAME_____

ADDRESS_____

CITY_____

ZONE_____ STATE_____

For more information about products advertised on this page use Information Center, page 31.

'Today's Forgotten Man'

Westinghouse 'Bing-Bong' Promotion Will Aid Retail Salesman—Help Replace 'Pricemanship' with Salesmanship

MANSFIELD, Ohio — The Westinghouse major appliance division is spending $2,000,000 to help today's "forgotten man, the retail salesman."

The company is doing it through a nationwide promotion called "Bing-Bong" backed up with heavy national advertising.

John J. Anderson, the division manager, announced the five-month sales training program which he said will produce cash and merchandise awards for more than 7,000 retail salesmen. Westinghouse recently unveiled details of the program to retailers and their salesmen at the first of a series of regional dealer meetings.

Simultaneously with the sales training effort the company is announcing a three-month advertising barrage featuring broad use of network television, consumer magazines, Sunday supplements, and factory placed key city advertising. In addition, the company is putting four retail promotions into the field, promotions that tie directly to the advertising.

'Everyone's Picking On the Salesman'

"Everyone's picking on the salesman for industry ills when he's only been doing what we've taught him," Anderson said. "The customer wants to be sold and the salesman wants to sell, but our industry's current market tactics call for 'pricemanship,' not salesmanship. This is a constructive program designed to get him back selling product and features instead of sharp pencil pricing."

Anderson said Bing-Bong gives Westinghouse retail salesmen chances to win cash and merchandise three different ways:

1. Between March 18 and June 15, Westinghouse factory and distributor sales executives are placing more than 7,000 telephone calls to retail salesmen. Each caller will ask the salesman for the four main Bing-Bong selling points of a Westinghouse major appliance. Up to $75 will be paid for the correct answers.

2. Retail sales of Westinghouse major appliances between Feb. 18 and July 12 accrue points which apply toward the salesman's choice of major appliances.

3. Each retail salesman accumulating 15,000 points is eligible to write a 100-word letter telling "How Bing-Bong's four points helped me make my toughest sale." Writers of the best letters in each of the company's seven sales regions will have their choice of speed boats, sports cars, airplanes, three rooms of furniture and other prizes.

Heavy Advertising To Spur Consumer Interest

To develop consumer interest in Westinghouse concurrent with the sales training program, Westinghouse will support a heavy national advertising program integrated with local promotions and advertising. "Studio One" will be the television vehicle and Sunday supplements and key city newspaper ads will tie in with the television commercials.

National magazines on the schedule March through May include *Life, Saturday Evening Post, Progressive Farmer, Better Homes & Gardens, Home Modernizing, Farm Journal, Household,* and the REA magazine group.

4 Retail Promotions Described

The four retail sales promotions are the "White Glove Carnival," the "Bell Ringer," "Cake-Bake," and "Open House Celebration."

The White Glove Carnival is a laundry equipment promotion based on the "sand test" television commercial Westinghouse used last fall. It is built around the use of Marine Corps white gloves which were used on the program to inspect the Laundromat for any trace of sand following the test.

The Bell Ringer is a traffic-builder promotion inviting customers to a dealer's floor to open the Westinghouse "Frost-Free" refrigerator door. Every 60th door-opening, the bell rings signifying the start of a Frost-Free defrosting cycle and the person opening the door wins a prize.

The Cake Bake contest is a full-scale continuing contest in a dealer's store with daily prizes and as many as 10 Westinghouse ranges as grand prizes at the conclusion of the contest.

The Open House celebration is planned as an invitation event with major appliances as door prizes.

Gibson Salesmen To 'Dig for Duds'

GREENVILLE, Mich. — By summer, salesmen for distributors and dealers of Gibson Refrigerator Co., a division of Hupp Corp., should be among the best dressed men in the appliance business.

That's because Gibson is offering them clothing of their choice for selling Gibson appliances.

For every sale of major appliances from Gibson's line, a distributor or dealer salesman receives a point credit toward his choice of dress shirts, sport shirts, pajamas, athletic shirts, shorts, T-shirts, neckties, and handkerchiefs. Three points entitle him to select a package containing one of more of the prizes.

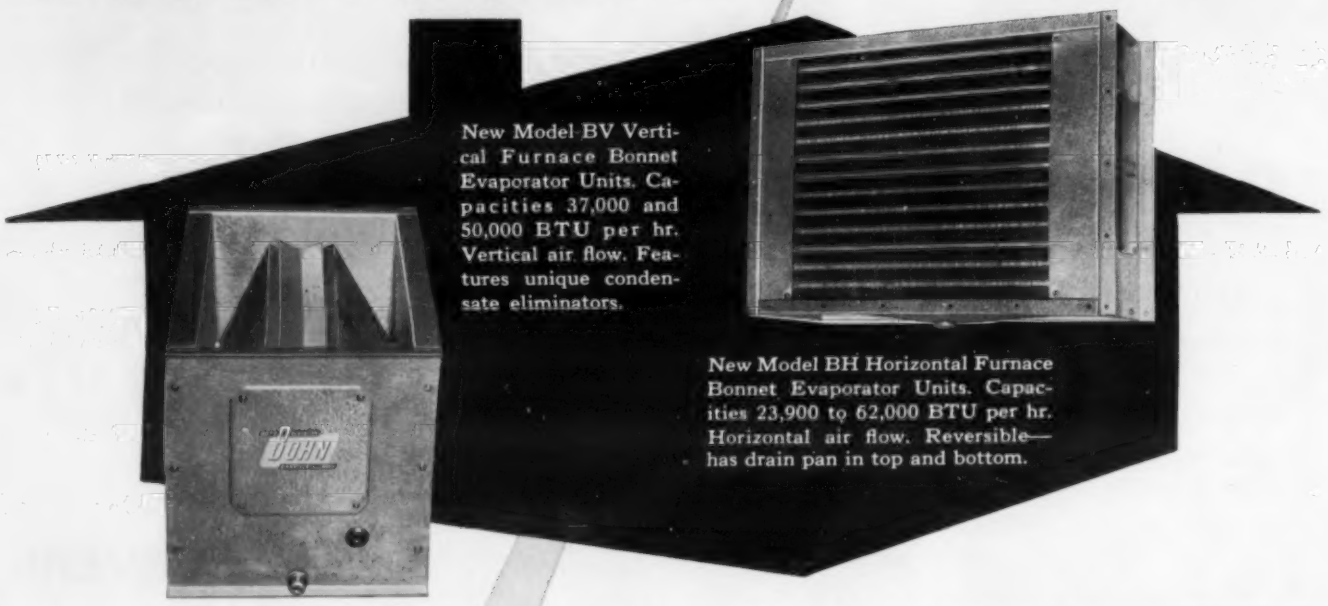
There's no limit to how many prizes a salesman can win and no quota to fill before he starts building points. All he has to do is "dig for duds"—the official title of the promotion.

George Bates Retires As Home Equipment Head

MEMPHIS—George B. Bates, owner-president of Home Equipment Co., home appliances, etc., retired Jan. 1 as active head of the firm he organized in 1943 in order to devote his time to Brickell Institute of Leadership Training, of which he is vice president.

"I shall continue as owner of the Home Equipment firm, but its management will be in the hands of its personnel," Bates stated. New officers will be named at a later date.

BOHN Presents the NEW ANGLE



New Model BV Vertical Furnace Bonnet Evaporator Units. Capacities 37,000 and 50,000 BTU per hr. Vertical air flow. Features unique condensate eliminators.

New Model BH Horizontal Furnace Bonnet Evaporator Units. Capacities 23,900 to 62,000 BTU per hr. Horizontal air flow. Reversible—has drain pan in top and bottom.

Residential Evaporator Air Conditioning Units

No Dead Air Space • Insulated Cabinets

The NEW ANGLE in residential air conditioning design offers you many selling and installation advantages!

Only BOHN units provide a patented distributor employing a low pressure drop venturi which aids compressor efficiency. Minimum pressure drop. No equalizer required.

Only BOHN units contain special condensate drains to separate water from air flow in either direction! Air flows efficiently through the coil for maximum heat transfer *without dead air space.*

Heavy gauge grained aluminum cabinets and access panels are insulated to eliminate exterior sweating! Rust-proof. No painting required.

All models are U L listed. For details and specifications, request BOHN CATALOG BU-1.

BETZ DIVISION BOHN DANVILLE, ILLINOIS

Manufacturers of Commercial Refrigeration, Industrial Air Conditioning and Special Heat Transfer Surfaces

BOHN ALUMINUM & BRASS CORPORATION • BETZ DIVISION • DANVILLE, ILLINOIS

For more information about products advertised on this page use Information Center, page 31.

U. S. Court Rules Against Distributor's Interference

Finds for Discount House on Appeal

WASHINGTON, D. C.—A distributor has no right to interfere with the business of a discount house not authorized to sell his products, the U.S. Court of Appeals affirmed here.

In a brief unsigned opinion on two appeals arising from a dispute between Wilson Supply Co., Inc., authorized local distributor of Chrysler Airtemp room air conditioners, and Frank's of D.C., a local discount house, the court affirmed a lower court ruling.

Wilson sued Frank's for $100,000, charging that Frank's sale of Chrysler units at less than the dealer's authorized price had injured Wilson's business. Frank's, in a countersuit, accused Wilson's of interfering in the discount house's business and injuring it.

Frank's charged that Wilson's had sent two employes into the discount house to buy four Airtemp room air conditioners by check as part of a plan to establish that Frank's was making fraudulent representations in the sale of the unit. The following day Wilson's stopped payment on the checks and shortly thereafter returned the units.

Frank's attorney charged that this act injured the discount house's business and reputation.

In trial before District Court Judge F. Dickinson Letts last year, Wilson's complaint was dismissed. At the same time, Judge Letts upheld Frank's counterclaim and said the discount had shown "very clearly" that distributor had "tortiously interfered" with Frank's business. He declined to grant the discount house punitive damages, however, and confined the award to $2.39, the cost to Frank's of compensating the bank for the cancelled checks.

Both Wilson and Frank's appealed — Frank's from Judge Lett's refusal to permit it to amend its complaint to include a request for punitive damages, and Wilson for the dismissal of its suit against Frank's.

The Appellate Court said, in affirming the ruling, "Finding no error affecting substantial rights in either of these appeals, we affirm the judgment of the District Court."

Halts Misrepresentation Of Room Cooler Price

WASHINGTON, D. C.—The Federal Trade Commission recently approved a consent order prohibiting John G. Webster & Sons, Inc. here from misrepresenting the regular price of the Chrysler Airtemp air conditioners it sells.

The commission adopted an initial decision by Hearing Examiner John B. Poindexter containing an order agreed to by the company and the commission's Bureau of Litigation.

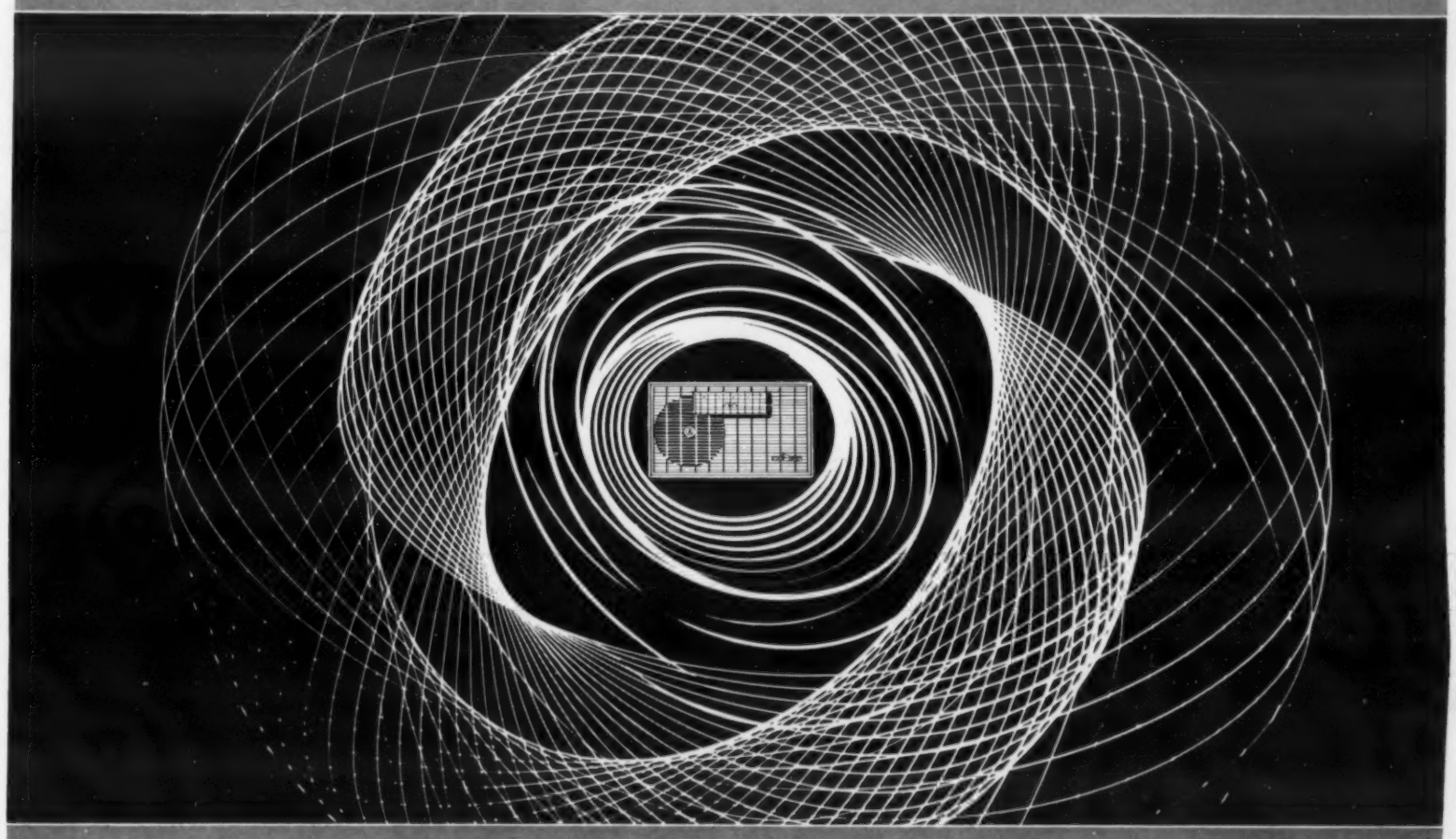
A commission complaint, issued Nov. 26, had charged the company with advertising for sale at $249.95 a Chrysler Airtemp air conditioner "Reg. $399.95." This so-called regular price, the complaint had alleged, "is grossly exaggerated and fictitious."

Named in the order prohibiting this practice is George C. Webster, an officer of the company.

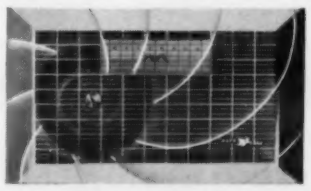
The agreement is for settlement purposes only and does not constitute an admission by the company or its officers that they have violated the law, it was pointed out.

G&E
CATALOG ON REQUEST
Wholesalers of Refrigeration Supplies
G & E EQUIPMENT SUPPLY CO.
OGDEN AT FULTON
CHICAGO 7, ILL.

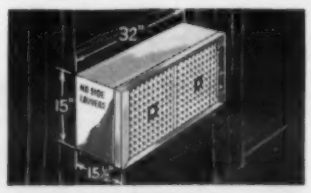
WITH
ROTO CONE COOLING...



MITCHELL
again obsoletes all other
room air conditioners

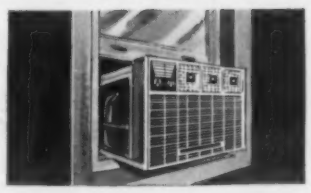


MITCHELL obsoletes all existing concepts of air conditioning...with Roto Cone. Now you can sell air conditioning's most brilliant advance in a decade...the air conditioner that cools 21% faster.



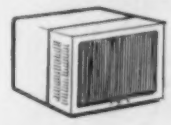
MITCHELL'S Pancake is lower, thinner, more versatile. Measures a mere 15" high, 15½" deep and 32" wide, with no side louvers. Advance design slide-out chassis provides unlimited application.

MITCHELL'S 12 new low amp air conditioners feature big cooling capacity and up to 40% savings on electricity. Available in "Sill", "Thin", "Thin and Low", and "Casement" styles.

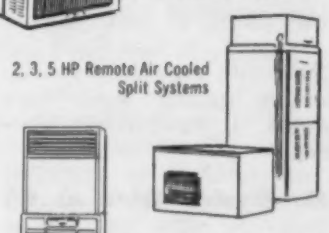


MITCHELL features deluxe Ultra-Thin versatility. Takes 54% less space...fits flush inside or outside with the exclusive Mitchell interchangeable slide-out chassis in identical ¾ HP, 1 HP and 1½ HP cabinets.

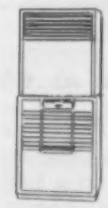
MITCHELL RESIDENTIAL AND COMMERCIAL PACKAGED UNITS
65 new products
65 new profit opportunities...



2, 4 HP "Compax" Air Cooled Self-Contained Packages



2, 3, 5 HP Remote Air Cooled Split Systems



2, 3, 5 HP Store Coolers and Residential Add-On Units Air or Water Cooled

Write today for your invitation to profits
Robert H. Lodge, Sales Manager
Packaged Air Conditioner Division, Mitchell Manufacturing Co.
Chicago 45, Illinois

*MAKE **BIG** MONEY IN 1957—CALL YOUR MITCHELL DISTRIBUTOR*

MITCHELL...*The World's Finest*...Most Complete Line of Room Air Conditioners.
Call your Mitchell Distributor now! Make big money in 1957 with Mitchell—leading the imaginative independents of the Appliance Industry.

MITCHELL MANUFACTURING CO. *A division of the* **CORY** *Corporation · 3200 W. Peterson Avenue, Chicago, Illinois*
IN CANADA: 19 Waterman Avenue, Toronto IN MEXICO: Mitchell-American, 78 Orinoco, Gral. Anaya Mex. D.F.
Copyright 1957, Mitchell Mfg. Co., Chicago, Ill.

For more information about products advertised on this page use Information Center, page 31.

Jan. Home Building Up Over Dec., FHA Reports

WASHINGTON, D. C.—Proposed home construction under the Federal Housing Administration Mortgage Insurance program rose seasonally in January but still was well under the year-earlier level.

FHA said it received applications to insure 10,549 proposed houses in January. This was up from the 7,749 received in December—traditionally the low month in FHA activity—but below the 15,582 received a year ago.

Applications to insure new home mortgages by FHA are considered to be one of the best indicators of trends in future home construction, it was pointed out. Another significant indicator is the volume of requests for new home appraisals under the GI Home Loan program. In January, the Veterans Administration previously reported, new appraisal requests dropped to their lowest level in nearly 3½ years, it was reported.

On older homes, FHA noted January applications followed much the same pattern as on new homes. The agency said it received applications covering 14,283 existing units in January —compared with 10,268 the previous month and 19,076 in January of last year.

Congress was urged by the National Association of Real Estate Boards to authorize the FHA to reduce down payment requirements on loans the agency insures.

Water Saving Clinic Draws 100 Contractors

GRAND RAPIDS, Mich.—On Monday, March 25, Harris Supply Co., wholesaler in Grand Rapids, Kalamazoo, and Lansing, held a one-night water saving clinic at the Manger-Rowe hotel here in conjunction with Dunham-Bush, Co., Calgon Co., and The F. E. Meyers & Bro. Co.

About 100 contractors and servicemen in the heating and cooling fields learned more about sizing, installing, and maintaining cooling towers, evaporative condensers, and circulating pumps, as well as coping with water problems that arise after the equipment is in operation.

Speakers were Ken Campbell and Herb Bolhouse of Dunham-Bush, W. R. Bauman of Meyers Bro., and Bill Walter of Calgon. A panel type question-and-answer period was held after the talks, with questions being directed to anyone of the men on the panel, it was pointed out.

"Comments regarding the information gained were very favorable," it was further pointed out.

E. R. Ryder Dies at 65

BUFFALO—Elliott R. Ryder, 65, air conditioning and heating engineer, died recently in a Buffalo hospital. He was a consulting engineer with the firm of St. John, Pratt & Carlson. Prior to coming to Buffalo in 1954 he owned a heating and air conditioning business in Troy, N. Y., for 25 years.

Chicago To Open 3-Week Promotion To Up Room, Central Unit Sales

CHICAGO—On Sunday, April 14, *The Chicago Sun-Times* and the local Electric Association will begin a concentrated three-week promotion designed to boost sales of window and central air conditioning units in the Chicago area, the newspaper announced.

Each Sunday for three weeks, the *Sun-Times* will publish four consecutive pages of air conditioning advertising and information. In the same period, two facing pages will appear each Monday through Friday, making a total of 42 pages.

Editorial coverage will offer advice on selecting air conditioning units, and information about the various types and brands available.

A highlight of the 1957 air conditioning promotion will be a series of three "Name the Animals" contests in the *Sun-Times*. "Name the Polar Bear" will run from April 14 through April 20, "Name the Penguin," from April 21 through April 27; and "Name the Seal," from April 28 through May 4. Four ¾-hp. air conditioners will be awarded weekly.

To induce readers to visit their dealers, a grand prize of a five-day New York deluxe air trip for two or a $600 down-payment on a central home air conditioning system, will be awarded only to the grand prize winning contestant whose entry form is counter-signed by a dealer.

Approximately 32,700 lines of air conditioning advertising will appear in the *Sun-Times*.

CORRECTION

MODEL NUMBER of the residential air conditioner in the foreground, exhibited by the Air Conditioning Div. of American Standard at the ASHAE show in Chicago, was given incorrectly in the March 18 issue of the NEWS. It is the GUA-150. Other units shown (from l. to r.) are models HCA-3F, C-85-OB, and CCA-3.

Opens Auto, Central Air Conditioning Firm

HOUSTON, Texas — Formal opening of Matthews Air-Conditioning Co. at 4001 McGowan was announced by Milam A. Matthews, owner of the sales and service firm.

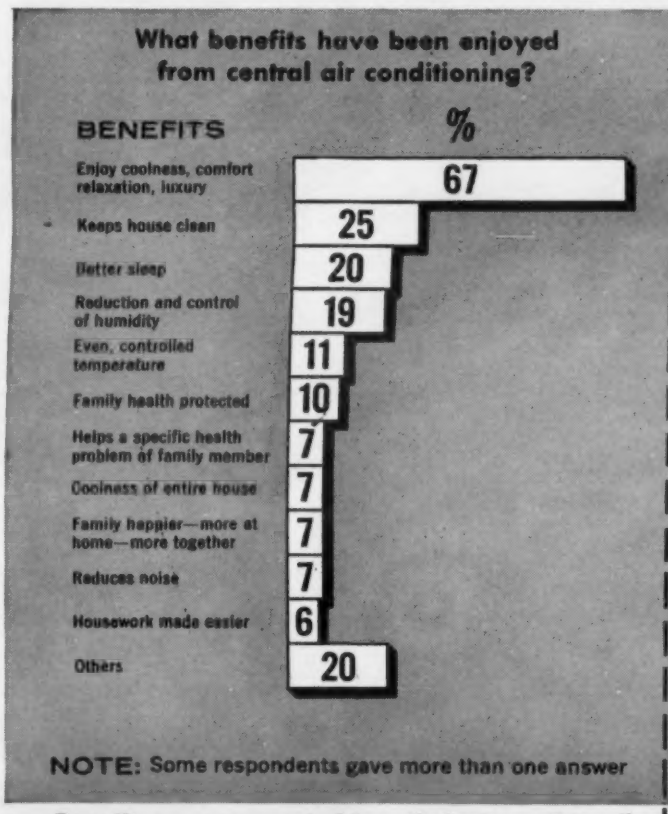
The company will merchandise and install the new "Vornado" automobile air conditioning units, as well Vornado central air conditioning units for homes.

Service on the units also will be available, Matthews indicated.

Matthews was formerly Houston district manager for Kelvinator Div., American Motors Corp., the announcement explained.

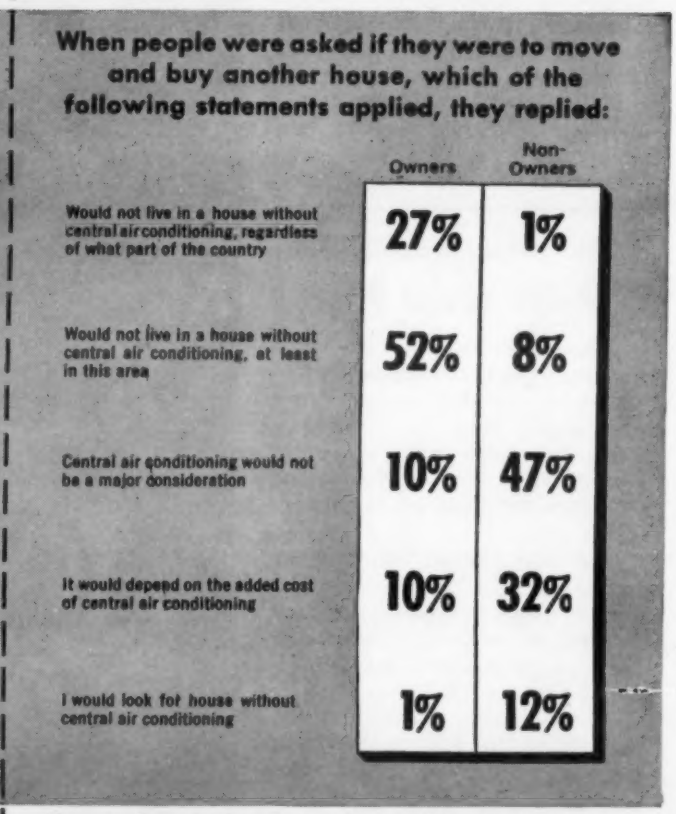
How to sell more home

Prospects need more understanding of specific benefits of air conditioning.


What benefits have been enjoyed from central air conditioning?
BENEFITS
%
Enjoy coolness, comfort relaxation, luxury 67
Keeps house clean 25
Better sleep 20
Reduction and control of humidity 19
Even, controlled temperature 11
Family health protected 10
Helps a specific health problem of family member 7
Coolness of entire house 7
Family happier—more at home—more together 7
Reduces noise 7
Housework made easier 6
Others 20
NOTE: Some respondents gave more than one answer

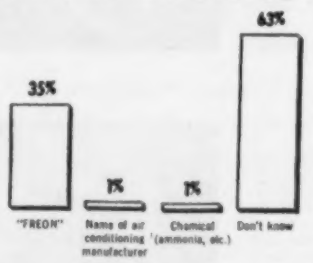
Benefits owners reported from their air conditioning. Sales campaigns gain impact when they stress specific benefits like these, reported to Du Pont surveyors by satisfied owners of air conditioning.

Prospects need more awareness of complete owner satisfaction.


When people were asked if they were to move and buy another house, which of the following statements applied, they replied:
Owners
Non-Owners
Would not live in a house without central air conditioning, regardless of what part of the country 27% 1%
Would not live in a house without central air conditioning, at least in this area 52% 8%
Central air conditioning would not be a major consideration 10% 47%
It would depend on the added cost of central air conditioning 10% 32%
I would look for house without central air conditioning 1% 12%

Respondents' views on air conditioning if they were to move and buy another house. Broadly, 8 out of 10 owners would not live in another house without air conditioning, against only 1 in 10 among non-owners.

Q. *What is the name of refrigerant used?*



35% IDENTIFY FREON* AS THEIR REFRIGERANT

Over one-third of owners surveyed readily identified "Freon" as the refrigerant in their home air conditioning systems. That's an impressive measure of the widespread brand recognition "Freon" has gained in its 26 years on the market.

To help make sure the equipment you manufacture, sell or service gives years of trouble-free performance, always specify "Freon." It's acid-free, pure, dry and safe. You can't buy a better refrigerant than "Freon."

FREON® REFRIGERANTS

**Freon and combinations of Freon- or F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.*

For more information about products advertised on this page use Information Center, page 31.

U. S. To Air Condition Bldgs. --

(Concluded from Page 1)

questioned in an article which Edwin A. Lahey and David Kraslow, of the Washington Bureau of the Knight Newspapers, wrote about the "fat" parts of the $71,800,000,000 Government budget for 1958.

Knight Newspapers are published in Detroit, Chicago, Miami, Akron, and Charlotte, N. C.

As published in *The Detroit Free Press,* the article appeared under the heading: "Do You Claim the Budget's . . . Too Long? And Uncle Sam Is Too Fat?" A "preface" to the article stated:

"Don't let anyone tell you that you can't have a say in helping Congress trim the Federal budget. Everyone else is in the act, and you, too, can tell Congress where to head in once you know the score—which is given in the following.

"For example, let's say you don't have air conditioning in your home, and read that your tax dollars are going to buy $41,850,000 to cool the brows of Federal workers.

"Your response may be: 'Swell, the poor fellows deserve comfort and I'll chip in part of my income tax to help buy it.' Or, just possibly: 'Until I get air conditioning I'm not buying it for anyone else! Out with it.' In either case, you can let your Senator or Congressman know how you feel. . . ."

Makes 'Strong' Case for Cooling

However, a strong case for "the other side of the story" was made here last week by Cloud Wampler, chairman of the board of Carrier Corp. He was the keynote speaker before an air conditioning symposium sponsored by the U. S. Dept. of Commerce, civilian and military government agencies, and the air conditioning industry.

Wampler observed that in the majority of the industry's markets, "air conditioning is now accepted as an economic necessity." He predicted that the vast majority of the 7,000 buildings managed by the General Services Administration would be air conditioned before very long.

While these installations "will represent an important investment of taxpayers' money, they should result in improved productivity and reduced costs of absenteeism, turnover, recruitment, and training," he emphasized.

Wampler declared that "those who compete for manpower or consumer dollars will do so at an increasing disadvantage without air conditioning.

"As a matter of fact, I strongly suspect that in this era of clerical shortages, air conditioning right here in Washington is attracting employes from non-air conditioned buildings.

"Having spent a considerable part of my life in the financial world, I am acutely aware of the economic motivation behind a decision to install a central air conditioning system.

'Dollar-and-Cents Pay-Off'

"I know that the decision is not made primarily because an air conditioned environment is pleasant. No chief executive officer could justify the expenditure on that basis alone. His decision must be predicated on a dollars and cents pay-off.

"The problems faced by the Federal Government in this respect are no different than those faced by private industry and commerce.

"You have first, the enormous task of recruiting and training manpower. Then, with a heavy investment in a trained labor force, you can't afford to lose it. And finally, you have a budget, and costs are rising, and taxpayers are pleading for relief.

Direct Benefits Of Air Conditioning

"As a direct result of air conditioning a structure, the economic returns come in the form of lower labor turn-over, less expensive recruitment, fewer employe errors, less time lost, and a higher level of output. These represent the pay-off. . . .

Employes Let Off In Hot Spells

"Do you remember the heat wave that struck Washington in the summer of 1953? Day after day, Federal employes were sent home early and I have a pretty good idea of their working efficiency long before they were released.

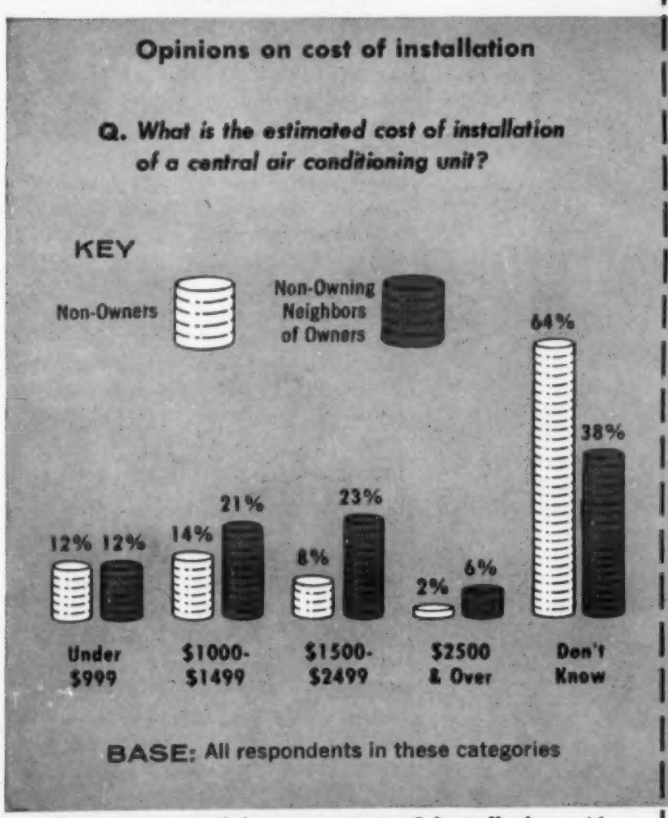
"With no intent to be sadistic —really—I examined some clippings from our files. On the second of August, the *Washington Star* reported, 'More than 25,000 employes were allowed to leave work yesterday between 1 and 4:30 p.m.' And the next day: 'More than 13,000 had been excused before 2:30 p.m. and the movement was still in progress.'

"To some degree this story is repeated year after year.

"Believe me, many people are paying for air conditioning even though they don't themselves have it!"

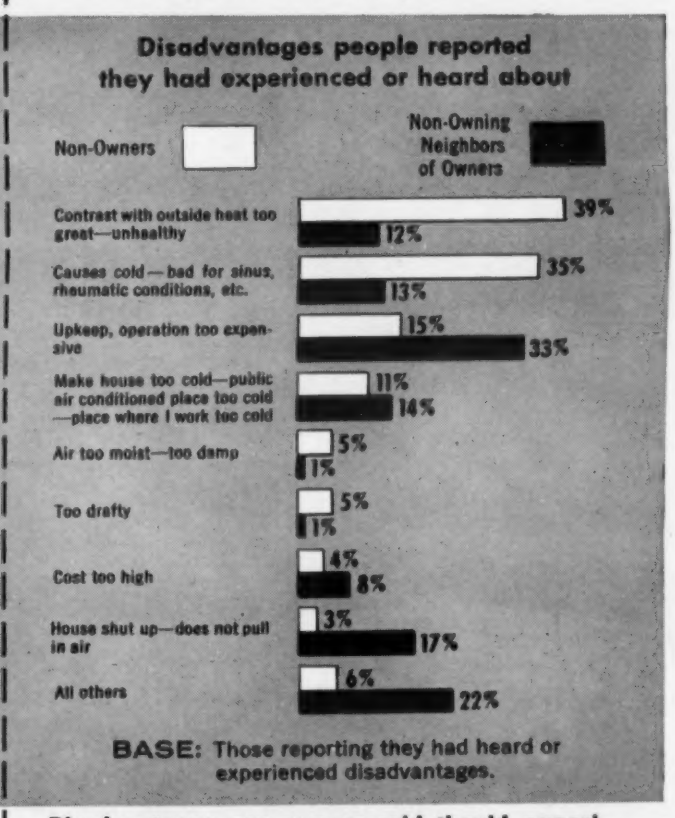
air conditioning

Prospects need more information on installation costs.



Non-owner opinions on cost of installation. Although majority of non-owners gave price as main reason for doing without air conditioning, few actually knew cost figures.

Prospects need more education to overcome misconceptions.


Disadvantages people reported they had experienced or heard about
Non-Owners
Non-Owning Neighbors of Owners
Contrast with outside heat too great—unhealthy 39% 12%
Causes cold—bad for sinus, rheumatic conditions, etc. 35% 13%
Upkeep, operation too expensive 15% 33%
Make house too cold—public air conditioned place too cold—place where I work too cold 11% 14%
Air too moist—too damp 5% 1%
Too drafty 5% 1%
Cost too high 4% 8%
House shut up—does not pull in air 3% 17%
All others 6% 22%
BASE: Those reporting they had heard or experienced disadvantages.

Disadvantages non-owners said they'd experienced or heard about. Misconceptions disappear and prospective sales increase when non-owners are given facts about health benefits and other advantages of home air conditioning.

Du Pont survey shows what's needed to develop big potential market

To help the air conditioning industry gauge its residential market, Du Pont conducted a nationwide survey of home owners. Returns show a tremendous potential for central residential air conditioning, with every promise of increased sales through alert, *informative* selling (see charts above).

Reported buying plans indicate an immediate market for 270,000 installations. Likeliest current prospects are among neighbors of owners, strongly pre-sold by exposure to benefits of home air conditioning.

Write Du Pont for more facts that can help you capitalize on the big potential in central residential air conditioning. There's no obligation. Simply write *E. I. du Pont de Nemours & Co. (Inc.)*, "Freon" Products Division, #14, Wilmington 98, Del.

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REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Always ask for "Freon" from the wholesaler who displays this sign . . .

Carrier May Merge With Electric Unit, Filter Mfr. Firm

SYRACUSE, N. Y. — Carrier Corp. has proposed a merger with Elliott Co., Jeanette, Pa., manufacturer of gas and steam turbines, electric generators and motors, blowers and compressors, filters, strainers, and tube cleaners.

Cloud Wampler, board chairman of Carrier, confirmed the negotiations, but declined to comment other than to state that Carrier "has made a proposal looking forward to a merger."

William A. Elliott, president of Elliott, referred all inquiries to Carrier. He added, "I just don't know what's in the wind."

Last January Carrier reported to the Securities and Exchange Commission that it held 114,700 shares of Elliott common stock as well as 6,000 shares of Elliott 5% convertible preferred stock. According to its 1956 annual report Elliott now has 540,311 common shares outstanding.

Radiant Heat Names Klaus Vice President-Marketing

SANTA CLARA, Calif.—Appointment of Erwin H. Klaus as vice president in charge of marketing of Radiant Heat & Cooling Corp. here was announced by Ellis A. Rother, president.

Plans for the marketing of the company's "Racon" line of heat and cooling systems will be announced in the near future, it was stated.

For the past five and a half years, Klaus served as marketing director of Northrup, King & Co., Berkeley.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

cigarette lighters—yet I prefer matches," chimed in one editor. "The general assumption that we all smoke is true. It doesn't follow that we like to monkey with lighters. To me that is a deplorable economic waste. Why don't they pass out cartons of cigarettes instead?"

The Gift Problem

All present agreed that the giving of gifts is a pleasant exercise in human cordiality, and were all for it. It's the waste involved in duplications and unwanted items which drew the criticism.

Problem is: what can a corporation buy in wholesale lots? Cheeses? Fruit baskets? Liquor? Wallets? Memo pads? Pen and pencil sets? Again the same trouble. Everybody seems to get the same idea at the same time, until recipients are up to here in cheese and wallets.

("If they'd only put a Lincoln or a Jackson in each of those wallets," sighed a lady household editor.)

In our industry it has been fashionable to give barometers. Fits in perfectly with the idea of air conditioning, you see. (However, in our neck of the woods, they're useless. Whatever the weather is now it will change in three hours.) They come in all sizes and shapes, though. Desk barometers, wall barometers, auto barometers, ship barometers, clock-barometers (within a two-month period "Dope" received three clock-barometers from organizations for which he made speeches)—until some of us are beginning to feel like the lady who told a psychiatrist she was crazy about pancakes.

"What's peculiar about that?" asked the Doc.

"You should see my attic," wailed the lady. "I have trunks full of pancakes up there."

In a memorandum to suppliers prior to last Christmas, G-M President Harlow Curtice recommended that all gifts to General Motors personnel be limited to items which could be "eaten, drunk, smoked, or used up within a few days."

This seems to make good sense, unless someone can come up with a really original idea for a permanent-type gift. One member of the abovementioned informal "panel" of editors and writers closed the discussion with a suggestion which received unanimous support:

GIVE BOOKS.

Journalists are inveterate book readers, of course, and many surveys reveal that a large majority of business executives read two or three books a month.

"Besides," concluded this fellow, "you can exchange a book you don't want for one you do."

Speaking of Surveys

A survey which rips apart surveys recently was completed by Robert Ferber, professor of University of Illinois, Bureau of Economic and Business Research.

His study indicates that many persons discuss things "they know absolutely nothing about" in public opinion surveys.

Are you surprised?

Like to Read Other People's Mail?

A Montreal insurance company has the following letter, duly signed by a citizen, in its files. It is believed to be a classic in the way of claims.

Gentlemen:

The soullessness of corporations such as yours is astounding. Let me review my case. I carry an accident policy, # ----- in your company, by the terms of which you agreed to pay me $25 a week during such time as I was prevented from working because of an accident.

A week ago I went around on Sunday morning to inspect a new apartment house that is being built for me. I climbed the stairs, or rather the ladder now located where the stairs will be when the house is finished and on the top floor I located a pile of bricks which were not needed there. Feeling industrious, I decided to remove the bricks. In the elevator shaft was a rope and pulley and on one end of the rope was a barrel. I pulled the barrel up to the top and, after climbing down the ladder, fastened the rope firmly at the bottom of the shaft. Then I climbed the ladder again and filled the barrel with bricks.

Down the ladder I went again, five stories, mind you, and untied the rope to let the barrel down. The barrel was heavier than I was and, before I had time to study the position, I was going up the shaft with my speed increasing every second. I thought of letting go of the rope, but before I had decided to do so, I was so high up that it seemed more dangerous to let go than to hang on. So I held on.

Half way up the elevator shaft, I met the barrel of bricks coming down. The encounter was brief but spirited. I got the worst of it and continued on my way toward the roof. That is, most of me went on—but my epidermis clung to the barrel and returned to earth. Then I struck the roof at the same time as the barrel struck the cellar. The shock knocked the breath out of me and the bottom out of the barrel.

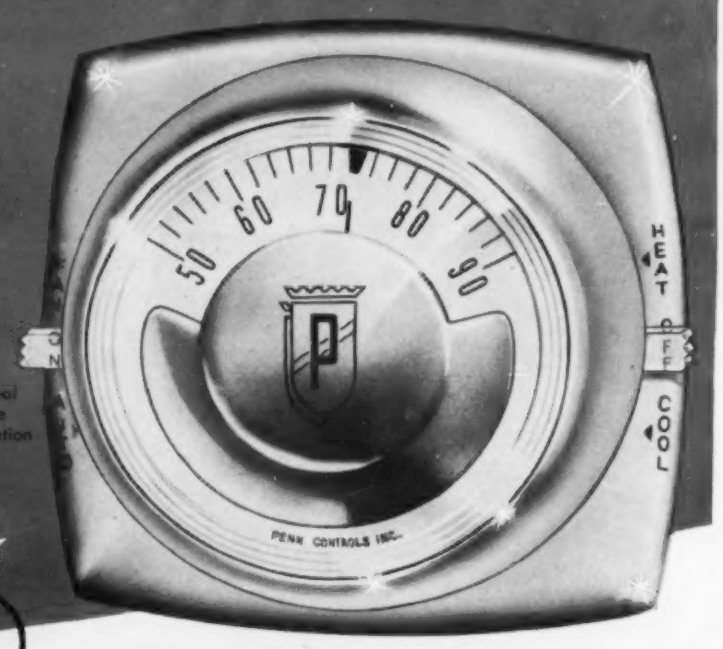
Then I was heavier than the empty barrel and I started down the shaft while the barrel started up. We met in the middle of our journey and again the barrel uppercut me, pounded my solar plexus, barked my shins, bruised my body, and skinned my face. When we became disentangled, I resumed my journey downward, and the barrel went higher. Soon I was at the bottom and stopped so suddenly that I lost my remarkable presence of mind and let go of the rope. This released the barrel which had reached the top of the shaft and it came down upon me, and it landed hard, too.

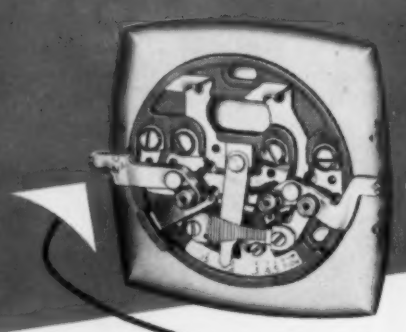
Consider the heartlessness of your company. I sustained five accidents within two minutes. Once—my journey up the shaft when I met the barrel of bricks; the second, when I struck the roof; the third, when I met the empty barrel; the fourth, when I struck the bottom and the fifth, when the barrel struck me.

Your agent states that it was only one accident, not five, and instead of receiving a payment at the rate of five times $25, I am only entitled to one accident at that rate and one alone. I therefore request you to cancel my policy as I have made up my mind that I will not be skinned, either by a barrel or an insurance company.

PENN "RIMSET" THERMOSTAT REDUCES YOUR INVENTORY

Now... the same room thermostat can be used for 12 different heating and cooling jobs... just change the sub-base!





Actual size illustration

APPLICATION	FAN SELECTOR SWITCH	SYSTEM SELECTOR SWITCH
HEATING ONLY	—	—
	—	AUTO-OFF
COOLING ONLY	—	—
	—	AUTO-OFF
	AUTO-ON	AUTO-OFF
	AUTO-ON	—
COOLING—with system interlock for separate heating thermostat	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL
COMBINATION Heating-Cooling	—	HEAT-COOL
	AUTO-ON	HEAT-COOL
	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL

HERE'S HOW IT'S DONE

You don't have to stock a different thermostat for each heating and/or cooling job! You just need one — the new all-purpose Penn "RIMSET" thermostat that quickly "plugs" into any sub-base required for the job. Inventory is reduced because you stock variables of the sub-base only!

Installation is simpler, too! Sub-base does not have to be installed in a perfectly level position for accurate operation. The adjustable heat anticipator and all wiring are on the sub-base where large terminals are easily accessible.

And, this beautiful room thermostat gives you new sales power! It has the largest, most easily read dial you've ever seen . . . and the scale remains stationary as the rim is dialed for the temperature setting!

Once you see this new, excitingly different thermostat, you'll want to specify and install it in all your heating and cooling jobs!

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

For more information about products advertised on this page use Information Center, page 31.

Freezer-Refrigerator Combinations

Rapid Acceptance Obsoleting Late Model Conventional Refrigerators; Lower Income Bracket Seen as No Barrier

AMANA, Iowa—"The combination freezer-refrigerator is finding favor with families of all sizes, in all income groups, in cities and in rural areas, in all parts of the United States and Canada."

"The rapid acceptance of the true combination freezer-refrigerator is making even late model conventional refrigerators obsolete."

These are some of the conclusions drawn from a national survey of more than 5,000 housewives who have bought and used an Amana Refrigeration freezer - plus - refrigerator (FPR) during the past six months.

One-Unit Convenience Cited by 82%

Eighty-two per cent of the housewives responding to the 36-question survey said that it was the convenience of having a freezer of large freezing and storage capacity in one unit with a full-size refrigerator, that led them to buy one of the new appliances.

Another reason given by 42% of the group was the need for more freezer space than that offered by conventional refrigerators. The need for a new refrigerator and the conviction that a combination was the best buy motivated 34% of the group. Twenty per cent reported that they bought the Amana combination because they needed a larger refrigerator than their previous model.

People Buying More Refrigerator Space

"In many cases the refrigerators previously owned by the consumers were of the same size or smaller than the refrigerator section alone of their new units," Amana said.

"For instance, 33% of those who purchased an 18-cu. ft. capacity combination with its 9.3-cu. ft. refrigerator storage space previously had refrigerators 8 cu. ft. or less in size, while 41% had units 8 to 10 cu. ft."

The survey report continued:

"The fact that true combinations are making obsolete even refrigerators of recent vintage is born out by the fact that 20.5% of the refrigerators traded in on the Amana FPR's were under five years of age, while 41.5% were 5 to 10 years of age. In the 10 to 15-year age bracket were 17.7% of the models, while 15.9% were over 15 years old.

"Almost half of the group, or 46.8%, traded in their old refrigerators for new FPR's. Old units were sold outright by 17.2% and another 25.7% either kept their old units or gave them away. A small number, 6.4%, didn't own a refrigerator before.

Trade-In Allowances

"Of those who traded in old units, the greatest number, 44.2%, received from $50 to $100 on the trade-in. One-fifth received between $100 and $150 and 15% yielded more than $150. One sixth of the trade-ins brought in between $25 and $50, while 3.8% were worth only $25 or less."

The Amana survey revealed that the market for true combinations isn't limited to any single income group or family size.

Almost a fourth of the purchasers, 24.2%, are in white collar jobs. The next largest group, 20.2%, have jobs requiring little skill. Skilled labor accounted for 18.5% of the purchases and members of professional groups numbered 16.8%. Men in the armed forced purchased 6.5% of the units.

About three-fourths of the warranty card holders, 76%, own their own home, in contrast with the national homeowner average of 55%. An even larger number, 80.6%, live in single family dwellings. Apartment dwellers number 9.3% and 6.7% live in duplexes.

Owners of the Amana combination range from persons living alone to families of six or more. Following the national trend, the great majority have two to four members in the family, it was found.

Small families, numbering two or three members, had a slight preference for the smaller FPR-14. They bought 56.8% of the FPR-14's and only 45% of FPR-18's. Among larger families the trend was the other way.

Advantage Cited After Several Months' Use

A second group of questions related to housewives' reactions to their FPR's after several months of use.

To determine how the freezer-plus-refrigerators adds convenience to homemaking, the survey listed the major possible advantages of the appliance. The possibilities and the percentage of owners who checked them as being important convenience factors follows:

Fewer shopping trips, 80%; have lots of food on hand at all times, 78%; can buy food in large quantities, 63%; can prepare meals in advance, 31%; can do large batch cooking, 24%.

76% Find Freezer Section Saves Money

In answer to a question as to whether or not the consumer felt the freezer compartment of their combination saved them money, 76% replied yes. Estimates of the amount saved per week ranged from $1 to $10 and over. One-third said they thought they saved money but were not sure how much per week their savings were.

Bottled up by dirty tubing?

GM STEEL TUBING IS GUARANTEED TO MEET YOUR SPECIFICATIONS!

Wherever clean tubing counts, GM Steel Tubing assures trouble-free performance *all* the time. Four separate cleaning processes and painstaking inspections guarantee the cleanest tubing you can buy! The steel strip is dry steam-cleaned, then annealed in a controlled atmosphere. Tubing is next solvent-cleaned in preparation for the fourth step . . . inspection by analytical equipment capable of detecting even the smallest amount of residue. The result: clean tubing you can depend on . . . at typical GM Steel Tubing savings. Help eliminate costly warranty claims. *Always* specify rugged, reliable GM Steel Tubing!

First step toward the industry's cleanest tubing is dry steam-cleaning of the strip.

GM STEEL TUBING BY ROCHESTER PRODUCTS

ROCHESTER PRODUCTS DIVISION OF GENERAL MOTORS CORPORATION ROCHESTER N.Y.

E-Z-SEE

SPRING COMPENSATED!

LIQUID INDICATORS

E-Z-SEE Liquid Indicators with spring-compensated gaskets are positively leak-proof —proved by hundreds of thousands now in use. Suitable for Freon-12 and Freon-22 to pressures of 500 psi.

AVAILABLE TO THE TRADE THRU WHOLESALERS EVERYWHERE

REMCO INC.
ZELIENOPLE, PA.

Means of Ending Pulsation In Oil, Gas Furnaces Sought In Research Project

CHICAGO — If present research proves successful, manufacturers and servicemen may be able to eliminate those annoying pulsations which sometimes occur in residential heating equipment, it was indicated at the 63rd annual meeting of the American Society of Heating & Air-Conditioning Engineers here.

Preliminary results of studies being conducted at Battelle Memorial Institute for ASHAE, American Gas Association, and Oil Heat Institute were outlined in a paper by A. A. Putnam and W. R. Dennis of Battelle.

With oil-fired equipment, increasing the opening of the barometric damper seems to increase the amplitude of pulsations, while a continuous spark appears to reduce them, these initial studies show.

RATE OF PRIMARY AIR FLOW IS CONTROLLER

Rate of flow of primary air, however, apparently is the chief controlling factor in pulsations of gas-fired furnaces or boilers, the authors indicate, although they pointed out that increasing the fuel flow rate also increases amplitude of oscillation.

Importance of the problem was highlighted by the authors, who explain: "A furnace or boiler which goes into pulsation will be noisy enough to be heard or felt throughout the dwelling, and sometimes may even cause damage to the house or its contents.

SERVICE CALLS 'EXPENSIVE'

"Service calls to correct the condition can represent a considerable expense to the organization responsible for satisfactory equipment performance. To eliminate pulsations, one or more components of the combustion system usually are modified by trial and error until a cure is effected.

"The modifications may be effective permanently in some installations, and may afford only temporary relief in others. Frequently, the same modifications will not suppress pulsations in other installations apparently similar to the first," comment the authors.

Initial tests in this research project were conducted with 21 units already in use, and then two experimental furnaces—one oil-fired, the other gas-fired—were designed to obtain more precise control over important variables.

13 FACTORS IN OIL-FIRED UNIT OSCILLATIONS

"Oscillations in an oil-fired unit," the authors said, "are vitally influenced by the interaction of three factors—the air flow pattern, the fuel spray pattern, and the pattern of recirculation of hot gases in the combustion chamber. This interaction might, under certain conditions, result in flame instability and periodic variations in rate of burning.

"The consequent variations in the rate of heat release would furnish the energy to drive the oscillations and maintain the combination of interactions causing the instability of the flame. Thus," the authors state, "no one of these factors can be isolated and given exclusive responsibility for the promotion of oscillations."

Laboratory tests on the gas-fired unit, a single port furnace, would indicate that "as the fuel rate was increased, the amplitude of oscillation increased. This was apparently a result of the additional energy available for driving oscillations as a rate of combustion was increased," the authors say.

"Secondary air flow rate and distribution have shown only a slight effect on oscillations in experiments made thus far and do not appear to be of primary importance," they add.

"At the present stage of investigation, the rate of flow of primary air in a given burner configuration appears to be the most significant variable affecting generation of oscillations," they declared.

The authors hope, of course, that the experiments will lead to a more complete understanding of the causes of pulsation, after which preventive and corrective measures can be devised against it.

AGA Terms Gas-Fired Heat Pump 'Unsurpassed' as Heating System

NEW YORK CITY—A gas-fired heat pump is technically possible even now, says the American Gas Association's Bureau of Statistics.

"For cooling systems, it has not yet been made as efficient as its electric counterpart," the bureau's report said, "but for the heating function, it is already unsurpassed.

"The gas-fired heat pump can be set for a wide range of design temperatures for heating, and is not only more economical to run than electric, but, more important, takes less room.

"Given an efficient method of heat storage, the excess heat generated may be recovered and coordinated with a water heating system as well."

The bureau also declared in its report that "the combination package will be essential to compete with the electric heat pump."

Gazing into its crystal ball, the bureau foresaw eventual unification of utilities in a home through a system that can supply all heat requirements from a single heat source.

"From a central gas-fired boiler-type arrangement, controlled by a series of thermostats and valves, a super-heated liquid may flow through the house," it explained.

"It would run through pipes in baseboards and floors to provide radiant heating, around a storage tank to heat water, through coils of tubing set in a counter top to cook food, through tubes in and around cupboards built into the walls to act as ovens and dryers."

AIRO stands for

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For more information about products advertised on this page use Information Center, page 31.

2 Cities Propose Special Higher Water Charge for 'Water Wasting' Units

* * *

Milwaukee Plans $20-Per-Ton Extra Charge Each Year for Air Conditioners over 3 Tons

MILWAUKEE—A dispute has developed here between air conditioning users and manufacturers' representatives and common council over a proposed ordinance which would place a demand charge on water-cooled systems over 3 tons that do not recirculate water.

A charge of $20—in addition to regular charges—would be placed each year on each ton of refrigeration capacity beyond three.

After more than two hours of hearing recently, the common council utilities committee decided to form a committee of 10 city officials and representatives of users and manufacturers to study the ordinance and report recommendations to council.

Spokesmen for the air conditioning industry and users claimed the ordinance was discriminatory. However, many of them agreed that "something" must be done to conserve water.

It was suggested that instead of the demand charge the city might seek another general water rate increase. But committee members replied that a rate increase would hit everyone, whether or not they used air conditioning equipment. It was further argued that this would require all water users to subsidize air conditioning users.

A councilman asserted that "water shortages could not be blamed on air conditioning users alone." He said that household washing machines and dishwashing machines also used a lot of water.

Another council member said growing use of air conditioning "is straining the water system."

A report from the city's water works expansion consultants was cited to show that existing air conditioning equipment used water at the rate of 50 million gallons a day, and that if no controls were established that rate would soon be doubled.

The report further urged the city to discourage installation of air conditioning equipment that did not recirculate water and encourage installations that did.

Use of conservation measures could cut water consumption by air conditioning equipment 95%, it was said.

* * *

Chicago Warns Users To Save Water Or Face Higher Cooling Water Rate

CHICAGO—A special higher rate for water used in water-cooled air conditioning equipment without water saving devices is being considered here.

H. H. Gerstein, assistant chief engineer for the Water Bureau, says that the city faces the alternative of such a charge or a rate increase for all users.

He told the opening session of the Illinois Section, American Water Works Association, that continued expansion of air conditioning without water saving devices would "prove too heavy for present equipment" and compel construction of expensive standby facilities.

"Annual fixed charges estimated for such equipment would be $43 per average unit," he declared. "The revenue at present water rates would be $14. If the user did not pay this extra charge it would have to be paid by the taxpayers, and this would be called obviously unfair."

Installation of water-cooled air conditioners which use the same water time after time would do away with the need for such a charge, he continued.

Many new installations have the water saving feature, he said, but 85% of the older facilities "are wasteful," using the water only once.

It was noted that air conditioning facilities have doubled in Chicago since 1950 and are expected to double again by 1960, according to bureau estimates quoted by Gerstein. These show that a big office or apartment building could use enough water to supply the average population of from 15,000 to 20,000.

Use of "proper equipment" would cut this usage by more than 90%, Gerstein added.

He said estimates indicate that at the beginning of this year water using air conditioning equipment with a capacity of 296,000 tons was installed in the city. About 560,000 tons of water cooled units will be installed by 1960, 150,000 tons of it in the downtown area.

Gordon Foods To Build Air Conditioned Plant

ATLANTA — President Pat O'Brien says plans have been completed for construction of a new food plant and general offices here for Gordon Foods, a division of Sunshine Biscuits.

The one-story plant will contain 164,000 sq. ft. of manufacturing floor area. The building to house the offices will have approximately 16,000 sq. ft., and will be two stories high.

O'Brien said several hundred tons of air conditioning equipment are to be installed. The roof of the plant will be "ponded" and will hold 100,000 gals. of water which will provide cooling on an area equivalent to 4½ acres. The evaporation from the huge "pond" will aid materially in cooling the interior, it was stated.

Cooling Firm Branches Out

ALBUQUERQUE, N. M.—Criswell Heating & Air Conditioning, Inc. here is opening a branch in Alamogordo under manager of S. A. Bishop.

THERE'S A PERFECTION AIR CONDITIONER FOR EVERY CUSTOMER

YOU'LL MAKE SALES RECORDS WITH PERFECTION . . . there's a product for every prospect. The new Perfection Tuckaway that will handle almost any installation . . . air-cooled units from 2 ton through 10 ton . . . water-cooled from 2 through 40 ton . . . plus 6 room air conditioners for added sales.

YOU CAN COMPETE FOR EVERY SALE WITH PERFECTION... there's a price for any installation. A De Luxe line for the top of the market . . . a standard line for the mass market.

YOU CAN CLINCH SALES WITH PERFECTION. There are powerful sales features in every unit. Efficient, *full-capacity* air conditioning that does a complete job and costs less to operate. (And eliminates service calls.)

YOU GET IMMEDIATE DELIVERY FROM YOUR PERFECTION WHOLESALER. You may not stock the unit your customer wants . . . but your nearby wholesaler does. And you can get it immediately . . . in time to clinch the sale.

YOU CAN DEPEND ON PERFECTION COOLING AND HEATING... your customers will too. Perfection has been making "home comfort" products since 1888. National advertising, local advertising, and the most complete dealer promotional program in the industry will continue to sell Perfection quality in 1957.

YOU'LL PICK UP NEW SALES WITH PERFECTION. You can't miss with matching Perfection furnaces—the only furnaces with the exclusive sales feature—REGULAIRE.

A FEW TERRITORIES ARE STILL OPEN—write, wire or phone today!

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West 9-6794

2-Day Study of Residential Conditioning Including 'Look Into Future' Set for NWAHACA Cleveland Meeting May 1-2

CLEVELAND — Announcement of the program of subjects to be discussed at the second annual technical conference of the National Warm Air Heating & Air Conditioning Association discloses that attendants will participate in a comprehensive two-day study of residential air conditioning both present and future.

The conference will be held on Wednesday and Thursday, May 1 and 2, at Hotel Cleveland here. It is open to technical and engineering people from the entire industry.

Frank L. Meyer, president of the association, said the program has been arranged so that attendants "can take an exploratory look into the future of residential air conditioning and then get to work on discussing ways and means of meeting today's problems."

'Looking Ahead'

The morning session of the first day of the conference will be devoted to looking ahead, with such speakers as Meyer, who is president of Meyer Furnace Co., discussing "Research and the Future"; William H. Scheick, executive director of The Building Research Institute, Washington, D. C., describing "The House of the Future"; and Robert J. Waalkes, application engineer, Hart & Cooley Mfg. Co., outlining "The Basis of System Designs of the Future."

The Wednesday afternoon session will deal with such practical present-day design problems as "Problems in Estimating Operating Costs for Air Conditioning"—which will include discussions of both "The Climatic Factor" (speaker to be announced) as well as "The Human Factor." Ralph A. Gonzalez, director of technical services, Airtemp Div., Chrysler Corp., will discuss the latter subject.

Also on the list of problems to be discussed is "The Humidity Problem" by Dr. S. C. Hite, head of the Dept. of Chemical Engineering, University of Kentucky, and "The Problem of Cooling the Upstairs" by Prof. S. Konzo, Dept. of mechanical engineering, University of Illinois.

"This year's technical conference should have considerable appeal to the practical-minded technologist in our industry," stated Frank J. Nunlist, Jr., executive vice president, Mueller Climatrol Div. of Worthington Corp., and chairman of the Technical Conference Committee of NWAHACA, "because we have purposely tried to keep this year's program geared as close to our every-day design and engineering problems as possible."

Thus, the morning session of the second day of the conference will deal with such pertinent subjects as "The Use of Forced Attic Ventilation for Ceiling Heat Gain Control," by D. R. Bahnfleth, research associate, University of Illinois; "Refrigerant Flow Controls"—covering such devices as "Capillary Tubes" (speaker to be announced) and "Thermal Expansion Valves" to be discussed by J. A. Schenk, director of engineering, Alco Valve Co.; and "Sound Control in Air Conditioning Systems." The latter topic will be discussed by Warren Blazier of The Coleman Co., Inc.

Air Cleaning Function

"Last year, a good portion of our technical conference subject matter revolved around the heating function of the air conditioning system," said Geo. Boeddener, managing director of NWAHACA. "This year we are concentrating one whole session on another important air conditioning function — that of air cleaning."

The afternoon session on May 2 will be titled "Air Cleaning—An Essential of Air Conditioning."

It will consist of discussions of "Viscous Impingement Mechanical Type Air Filters," by Dale O. Bender, Research Products Corp.; "Charged-Media Air Cleaners," by Earl H. Evans, technical director, Amer Glass Div., American Air Filter Co., Inc.; and "Electro-Static Air Cleaners," by George Landgraf, vice president in charge of engineering, Trion, Inc., it was explained.

Nunlist will preside at the first technical session; S. C. Marshall, Minneapolis-Honeywell Regulator Co., at the second session; A. B. Newton, vice president-design research, The Coleman Co., at the third session; and W. E. Hood, director of engineering, Unitary Equipment Div., Carrier Corp., at the fourth session, Meyer pointed out.

Those who plan to attend the conference are urged to make room reservations promptly by writing to Hotel Cleveland, Cleveland.

Registration fees for the conference have been established at $20 per person for association members and $30 per person for non-members.

This fee includes two luncheons and one copy of conference proceedings (including all presentations and discussions) which will be published following the conference.

It's easier to sell a Name They Know

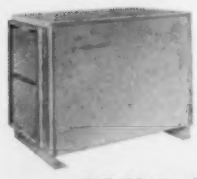
FRIGIDAIRE

FULL-HOME AIR CONDITIONERS

A complete line of water cooled, air cooled and combination systems for every residential application.

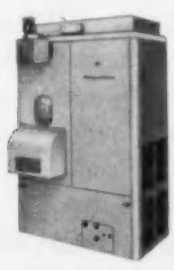
Vertical Cooling Coils 2, 3, and 5 ton capacities

Horizontal Cooling Coils 2, 3, 5 ton capacities



Coil-Blower Units 2, 3, 5 ton capacities

A complete line of gas and oil furnaces—designed to "go-together" with Frigidaire Air Conditioning Units



Year-Round Conditioners 2 and 3 ton cooling capacities, gas or oil

A complete line of air-cooled condensing units and condensers

The key to your profits is salespower. And Frigidaire has it—in products, training and promotion! That's why it's easier to sell Frigidaire—a name your prospects know and trust! Products are easier to install because they're complete units—prewired to sealed refrigerating systems to cut installation time, give a better job, fewer callbacks. Manpower! Frigidaire has it, too. Their team is experienced and close by to help you sell and service. Want to know more? Then... **WRITE**—*Commercial Sales Manager*, FRIGIDAIRE DIVISION, GMC, Dayton 1, Ohio.

PLUS THESE BIG SALES AND SERVICE ADVANTAGES

- **Technical Training Programs**—factory-backed application and service schools that are the envy of the industry—plus a complete continuing technical service for every dealer.
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- **Local Merchandising**—the works! Sales aids, displays, local advertising, sales promotion, co-op advertising—plus an individual dealer advertising service.
- **National and Local Advertising**—biggest campaign in Frigidaire history to make prospect preference for Frigidaire even greater!

FOR A NEW BOOST TO BUSINESS — GM GENERAL MOTORS

GO FRIGIDAIRE

'Woman's Touch' Home Cooling Promotion Kit Added by Lennox

MARSHALLTOWN, Iowa—A "Woman's Touch" model home promotion kit has been introduced to builders throughout the country by Lennox Industries, Inc.

The theme emphasizes the importance of the woman as the deciding factor in today's new home market. Kit consists of a complete home promotion package plus a comprehensive brochure of "Woman's Touch" feature ideas provided by the editors of leading consumer and building publications.

National advertising in consumer magazines will list participating builders and their locations. There also is a contest involved which will make awards to builders submitting the 10 best Woman's Touch ideas to Lennox, the company said.

"Early reports indicate greater interest in this promotion than in any of the successful Lennox promotions offered during previous years," it was stated.

For more information about products advertised on this page use Information Center, page 31.

Refrigerated Storage and Vending Units Cut Costs, Boost Efficiency for Pharmacy

LINCOLN, Neb.—Possibilities for use of refrigerated storage and vending to cut down expenses and increase efficiency of operation in the retail drug business are pointed up in the new Donley-Stahl Co. pharmacy at 24th and "O" Sts. Included is a walk-in cooler.

Oldest and largest professional-type pharmacy in Lincoln, the firm was established in 1918. It moved to new and larger quarters late in 1956, where is also is offering Lincoln's first drive-in prescription service. Nothing but professional items are carried. Even tobacco and candy are not stocked, and the closest thing to a marginal item is a line of "Hypo-Allergenic" cosmetics.

Manager Claude E. Donley pointed out that new lines of biologicals, antibiotics, etc., are extremely important in the operation of today's professional pharmacy. Proper refrigeration is a prime pre-requisite both in vending and storing such drugs.

WALK-IN allows Lincoln Pharmacy to take advantage of quantity purchasing of biologicals to help reduce expenses.

Walk-In Cooler Allows For Quantity Buying

With an eye to reducing costs through quantity purchases, as well as prolonging the potency of these and some other items whose refrigeration requirements are marginal, Donley decided to install a walk-in cooler in his new 64 by 142-ft. store. The cooler has 8 by 10-ft. space with an 8-ft. ceiling. It is located at the rear of the drug storage room and is used for storage of such items as suppositories, highly perishable ointments and solution, etc., as well as biologicals and antibiotics.

Reach-In Equipped With Pull-Out Trays

A five-door commercial refrigerator with approximately 50 cu. ft. of storage has been installed adjoining the open prescription department for combined vending and storage of biologicals, insulin, etc. Identified by a sign reading, "Refrigerated Biologicals," it faces the selling floor. Pullout trays facilitate stocking and making sales from the refrigerator.

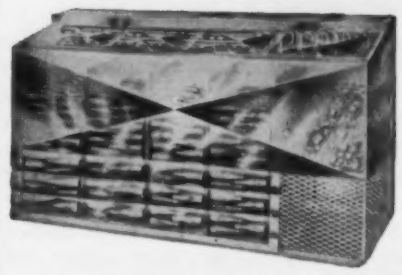
Air conditioning and heating are handled through the same ducts. Selling areas and prescription department, along with a laboratory, are cooled by a 5-ton Chrysler Airtemp unit, which also furnishes winter heating. Air vents were installed near the base of the 50-ft. display window to provide warm air in cold months to eliminate fogging of the glass. The air conditioning unit was installed at the rear of the laboratory, it was explained.

White adjustable metal shelving was installed throughout the storage and prescription areas. The main storage room has 1,176 lin. ft. of such shelving. Prescription room has 400 lin. ft.

Prescription department is divided into three sections. Tablets, including filling, packaging, and storage, are on one side. Liquids are in the center. Ointments are at the east side adjoining the laboratory.

Prescription files are housed in shelving beneath the compounding counter. Donley has over 8,000 recent prescriptions on file. Seven drawers mounted on steel rollers house the bottle supply, it was noted.

"A CASE OF COOL JUDGMENT"



FLO-COLD DRINKMASTER
STAINLESS STEEL CUBER — COOLER.
SOLD THRU DEALERS ONLY
WRITE
United Friguator Engrs.
MENOMINEE, MICH.
AVAILABLE IN SIZES 4 to 10 FT.

DIRECT EXPANSION, STANDARD & NON-FREEZE STEAM, AND WATER COILS

If your need is for finned coils—*quality* coils—and you need them fast, then write, wire or call us. Halstead & Mitchell's unusual manufacturing facilities give us production control matched by no one in the industry, and you'll benefit by the speed with which we can produce for you.

Halstead & Mitchell's "years-ahead" tooling is matched by "years-ahead" engineering. We are the only company which can offer "Turbu-Flo" fins on these coils. Thus when you order Halstead & Mitchell, you order coils with reserve heat transfer capacity. That's a real safe-performance bonus.

Note that you get this high-speed delivery and extra-capacity at a most competitive price. We are large volume manufacturers, and thus can save production costs which are passed to you in the form of attractive prices.

Want more details? Then write or call, *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

HM Halstead & Mitchell

ARI Prepares Several New Standards

To Cover Air Coolers; Remote Air Handling Units, Air-Cooled Condensers; Water Coolers; Ice Makers; Solenoid Valves; Others

WASHINGTON, D. C.—In a report on standardization activities of the Air-Conditioning & Refrigeration Institute, Joe H. Bergheim, ARI technical secretary, disclosed that in addition to several existing standards currently under revision, a number of new ARI standards are being prepared.

These new standards, he said, will cover the following equipment and products which have not previously been covered by any ARI standards:

Forced-circulation, free-delivery air coolers for refrigeration; remote-type air handling units; remote-type air-cooled condensers; self-contained, mechanically-refrigerated drinking water coolers; automatic self-contained ice makers; solenoid valves; capillary tube sizes; and aluminum refrigeration tubing.

Three new collateral publications also are currently being prepared, covering refrigeration piping, corrosion, and statistical analysis of evaluating liquid-line drier ratings.

In his report Bergheim pointed out that ARI standards activity has been stepped up during the past year "as a result of interest expressed both from within the institute and from outside organizations and individuals.

"The proposed ARI compliance program, now under consideration by several product sections and already put into effect by the Room Air-Conditioner Section, is a large contributing factor to the increased interest, since standards are necessary to any compliance program, and implementation of such a program certainly depends, to a large extent, on the quality and availability of adequate standards," he stated.

At the present time, Bergheim noted, ARI has 39 individual standards and one collateral publication relating to various types of equipment and products. The standards fall into three general categories: equipment standards, application standards, and rating and testing standards. The majority of ARI standards are equipment standards.

"Eleven standards were published during 1956," Bergheim pointed out. "Thus, nearly one third of the ARI standards are less than one year old. Seven of these recently-published standards are completely new publications, and the remaining four are revisions of previously-published ARI standards."

He reported that one of the most popular ARI publications is the booklet, "Properties of Commonly Used Refrigerants," which was first published in 1946, and revised in 1948.

"The booklet is currently under revision, and the revised edition will contain several additional refrigerants as well as up-to-date information on each refrigerant," he said.

Bergheim explained that ARI standards are reviewed and revised periodically, although the period between revisions may vary. He emphasized that the standards "are never considered completely final, and the various product sections continually strive to improve the standards and keep them up-to-date with each revision.

"For example, ARI Standard 620-56, "Published Ratings for Residential Air Conditioners," was first published in January, 1956. The Self-Contained and Residential Air Conditioner Section is currently combining the pertinent parts of Standards 2-10 and 620-56 into a new standard which will cover both self-contained and residential air conditioners."

It was noted that ARI also cooperates with other organizations and associations in the preparation of standards.

Following is the latest revised price list which includes all ARI standards and collateral publications:

Revised Price List

1-00 SERIES—ROOM AIR CONDITIONERS

STANDARDS FOR ROOM AIR CONDITIONERS .....$ .35
- 110-56 Room Air Conditioners
- *120-56 Cooling Load Estimate Form for Room Air Conditioners

2-00 SERIES—SELF CONTAINED AIR CONDITIONERS

STANDARDS FOR SELF-CONTAINED AIR CONDITIONERS..$ .35
- 2-10 Self-Contained Air Conditioners (Other than Room Air Conditioners)
- *2-20 Cooling Load Estimate Form for Self-Contained Air Conditioners

3-00 SERIES—SMALL COMPRESSORS

STANDARD FOR OPEN-TYPE REFRIGERATION CONDENSING UNITS FOR COMMERCIAL APPLICATION, 20 HP. AND SMALLER .....$ .35
- 3-10 Open-Type Refrigeration Condensing Units, 20 Hp. and Smaller, for Commercial Application.

STANDARD FOR SEALED (HERMETIC-TYPE) REFRIGERATION CONDENSING UNITS FOR COMMERCIAL APPLICATION, 5 HP. AND SMALLER .....$ .35
- 320-56 Sealed (Hermetic-type) Refrigeration Condensing Units, 5 Hp. and Smaller, for Commercial Application

4-00 SERIES—HEAT TRANSFER EQUIPMENT

STANDARD FOR FORCED-CIRCULATION AIR-COOLING COILS .....$ .25
- 410-56. Forced-Circulation Air-Cooling Coils

STANDARD FOR METHODS OF TESTING AND RATING FORCED-CIRCULATION AIR-COOLING AND AIR-HEATING COILS $1.00
- 411-56 Methods of Testing and Rating Forced-Circulation Air-Cooling and Air-Heating Coils

Tentative STANDARDS FOR AMMONIA CONDENSERS AND RECEIVERS $1.00
- 4-51 Ammonia Evaporative Condenser Units
- 4-52 Construction of Ammonia Condensers, Vertical Open Shell-and-Tube Type
- 4-53 Performance of Ammonia Condensers, Vertical Open Shell-

(Concluded on next page)

"Original capacity regained through CALGON® SCALE REMOVER... MICROMET PLATES keep it that way"

Hubert Nelson, President, Nelson, Phillips Company, Inc., Millburn, New Jersey

When the air conditioning equipment at the Paper Mill Playhouse near Millburn, New Jersey began to function poorly, the Nelson, Phillips Company, Water Conditioning Specialists, was called in.

They found that the two 25-ton evaporative condensers had become badly fouled with lime scale and sludge. Mr. Nelson stated, "After treatment with Calgon Scale Remover, the equipment regained its original capacity. Continuous treatment with Micromet® Plates was used to keep it that way. At the end of the summer, the coil was found to be as clean and free from scale as when the preventive treatment was started. Micromet Plates have really done their job." Mr. Nelson's comments are typical of those from the many satisfied users of Calgon's Big 3.

Calgon Scale Remover makes it easy to clean up a system completely. Excellent corrosion inhibitor protects system while in use. Special built-in pH color indicator shows how much scale remover to use, shows when more must be added and helps tell when system is clean.

Micromet Plates provide continuous treatment to inhibit further scale formation. A single charge will last about six months, and the inexpensive feeding bag is easily and quickly installed. You merely hang the bags in the water spray.

Calgon Algaecide controls slime and algae growths. Comes in pellet form for convenient handling. Positive action kills the growth. Periodic addition keeps equipment operating efficiently.

SEE YOUR REFRIGERATION WHOLESALER FOR CALGON'S BIG THREE!

CALGON COMPANY

A DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
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DIVISIONS: CALGON COMPANY, HALL LABORATORIES

Call on GLO-BRITE for

Molded
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Dow Styrofoam
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EXPANDED POLYSTYRENE PARTS FOR
REFRIGERATORS, FREEZERS,
AIR CONDITIONERS,
LOW TEMPERATURE ENCLOSURES,
PIPE COVERING.

Low Temperature Insulation Shaped or Molded Precisely to Your Specifications.

GLO-BRITE PRODUCTS, INC.
6415 N. California Ave.
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MARK YOUR SHIPPING ORDERS "UNCRATED"
THERE IS NO EASIER WAY TO CUT COSTS!

Via... North American VAN LINES, Inc. WORLD-WIDE MOVING

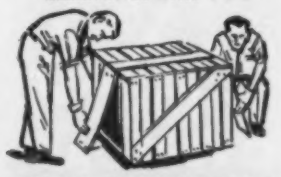
CRESTON DIVISION

A BETTER DEAL FOR
Factory • Merchant • User

New furniture, home furnishings and store and office equipment . . . UNCRATED . . . are more safely and quickly moved at lower cost from factory to display floor or to user. North American Van Lines, Inc., Creston Division, with experienced agents at both origin and destination, accepts undivided responsibility to assure prompt, safe delivery on schedule. You save crating and uncrating costs. It will pay to check NOW!

Write or call for "Facts about Uncrated Shipments" and Case Histories.

SHIPPING BY NAVL-CRESTON ELIMINATES THIS . . .



MATERIAL AND LABOR OF CRATING, UNCRATING AND EXCESS WEIGHT.

NORTH AMERICAN VAN LINES, INC.
CRESTON DIVISION, DEPT. R, FORT WAYNE, INDIANA

For more information about products advertised on this page use Information Center, page 31.

Price List--

(Concluded from preceding page)

and-Tube Type
4-54 Construction of Ammonia Condensers, Horizontal Closed Shell-and-Tube Type
4-55 Performance of Ammonia Condensers, Horizontal Closed Shell-and-Tube Type
4-56 Ammonia Liquid Receivers
Tentative STANDARDS FOR "FREON" CONDENSERS AND RECEIVERS .....$ .50
4-61 "Freon" Evaporative Condenser Units
4-62 "Freon" Water-Cooled Condensers
4-63 "Freon" Liquid Receivers
Tentative STANDARDS FOR WATER AND BRINE COOLERS..$ .50
4-71 Construction of Ammonia Brine Coolers, Horizontal Closed Shell-and-Tube Flooded Type.
4-72 Performance of Ammonia Brine Coolers, Horizontal Closed Shell-and-Tube Flooded Type
4-76 "Freon" Water and Brine Coolers.
Tentative STANDARD FOR APPLICATION OF REFRIGERANT HEAT TRANSFER EQUIPMENT .....$ .35
4-81 Application of Refrigerant Heat Transfer Equipment

5-00 SERIES—AIR CONDITIONING AND REFRIGERATION SYSTEMS EQUIPMENT

STANDARD NOMENCLATURE FOR RECIPROCATING COMPRESSORS .....$ .35
5-01 Standard Nomenclature for Reciprocating Compressors
STANDARDS FOR AMMONIA COMPRESSORS AND CONDENSING UNITS .....$ .50
5-12 Enclosed Ammonia Compressors, Vertical Single-Acting Type
5-13 Performance of Ammonia Compressors, Vertical Single-Acting Type
5-14 Standard Equipment for Ammonia Condensing Units
5-15 High-Speed Ammonia Compressors
STANDARDS FOR "FREON" COMPRESSOR AND CONDENSING UNITS, 25 HP. AND LARGER .....$ .35
5-21 "Freon" Compressor Units, 25 Hp. and Larger
5-22 "Freon" Condensing Units, 25 Hp. and Larger
APPLICATION ENGINEERING STANDARD FOR AIR CONDITIONING $1.00
530-56 Application Engineering Standard for Air Conditioning
STANDARD FOR APPLICATION AND INSTALLATION OF COMPRESSION REFRIGERATION SYSTEMS .....$ .35
5-40 Application and Installation of Compression Refrigeration Systems
STANDARDS FOR INSULATION FOR COLD STORAGE ROOMS, LOCATION AND INSPECTION OF DATA PLATES ON INSULATED REFRIGERANT-CONTAINING VESSELS, AND STEEL AND WROUGHT IRON PIPE .....$ .35
5-50 Insulation for Cold Storage Rooms
5-70 Location and Inspection of Data Plates on Insulated Refrigerant-Containing Vessels
5-80 Steel and Wrought Iron Pipe
STANDARD FOR LIQUID-CHILLING PACKAGES WITH RECIPROCATING COMPRESSORS, 2 HP. AND LARGER .....$ .25
590-56 Liquid-Chilling Packages with Reciprocating Compressors, 2 Hp. and Larger

6-00 SERIES—YEAR-ROUND RESIDENTIAL AIR CONDITIONERS

APPLICATION ENGINEERING FOR YEAR-ROUND RESIDENTIAL AIR CONDITIONING .....$ .50
*610-56 Application Engineering Standard for Year-Round Residential Air Conditioning
Interim STANDARD FOR PUBLISHED RATINGS FOR RESIDENTIAL AIR CONDITIONERS.$ .25
620-56 Published Ratings for Residential Air Conditioners

7-00 SERIES—VALVES, DRIERS, FITTINGS, AND ACCESSORIES

STANDARD FOR LIQUID-LINE DRIERS .....$ .50
710-56 Liquid-Line Driers
STANDARD FOR REFRIGERATION FLARE FITTINGS .....$ .25
720-55 Refrigeration Flare Fittings

9-00 SERIES—COOLING TOWERS

STANDARD FOR WATER-COOLING TOWERS FOR USE WITH AIR CONDITIONING AND REFRIGERATION EQUIPMENT .....No Charge
910-55 Water-Cooling Towers for Use with Air Conditioning and Refrigeration Equipment

*Also available separately in pads of 50 forms @ $1.

Complete Bound Set of ARI Standards $7.50

COLLATERAL PUBLICATION

PROPERTIES OF COMMONLY-USED REFRIGERANTS (Currently under revision. Available May, 1957.)

WHAT . . WHEN . . WHERE — *A Guide to Coming Events of Interest*

Refrigeration Service Engineers Society (RSES) Educational Forum
April 5-7, Sheraton-Palace hotel, San Francisco.

Gas Appliance Mfrs. Association (GAMA) Annual Meeting
April 8-10, The Greenbrier, White Sulphur Springs, W. Va.

National Warm Air Heating & Air Conditioning Association (NWAHACA) Committee Meetings, Technical Conference
April 29-May 2, Hotel Cleveland, Cleveland.

Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit and Conference
May 4-8, Shrine Exposition Hall, Los Angeles.

Air-Conditioning & Refrigeration Institute (ARI) Board Meeting and Annual Meeting
May 5-8, The Homestead, Hot Springs, Va.

National Restaurant Association (NRA) Convention and Exposition
May 6-10, Navy Pier, Chicago.

American Society of Heating & Air-Conditioning Engineers (ASHAE) Regional Meetings:
May 2-4, Region 5, New Orleans
May 6-7, Region 4, Los Angeles
May 10, Region 6, Tulsa
May 13, Region 3, Kansas City

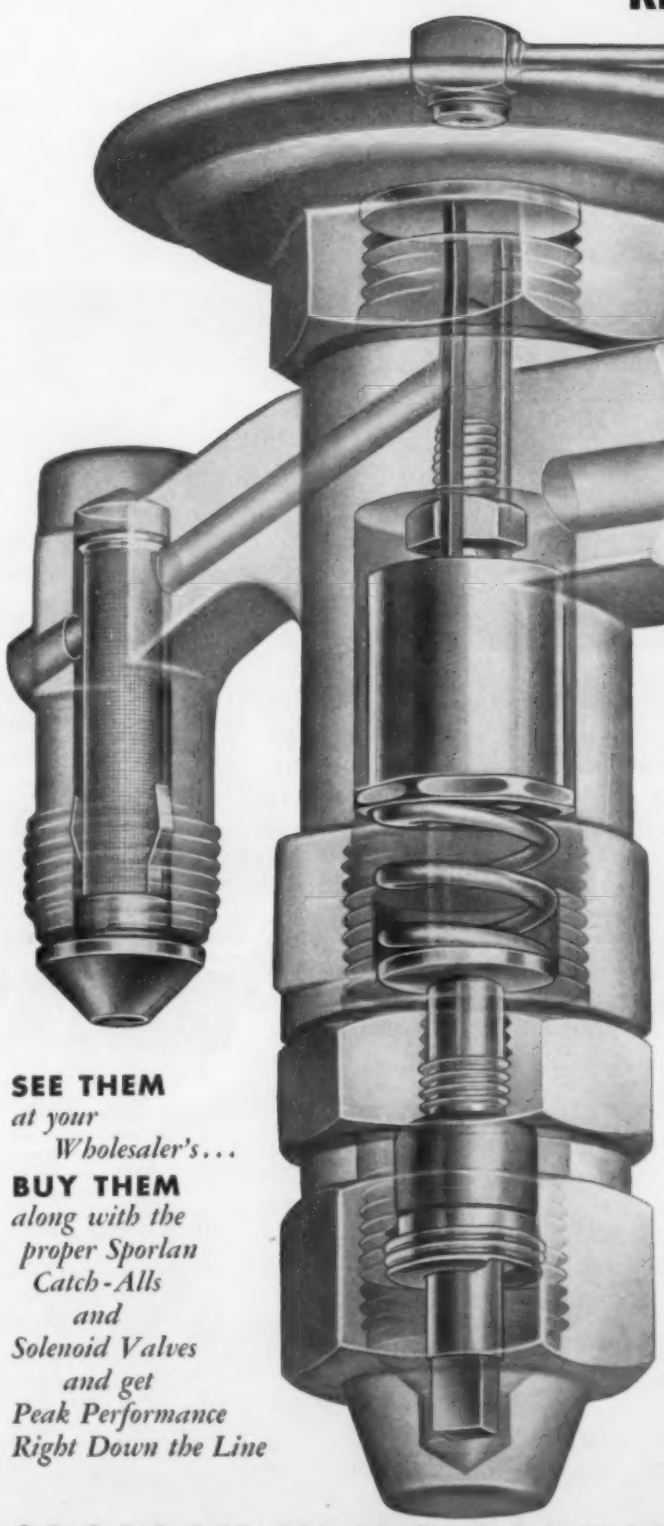
Mechanical Contractors Association of America (MCAA) Annual Meeting
May 7-10, Hotel Fontainebleau, Miami Beach, Fla.

American Society of Refrigerating Engineers (ASRE) Annual Meeting
June 2-5, Hotel Fontainebleau, Miami Beach, Fla.

National Warm Air Heating & Air Conditioning Association (NWAHACA) Summer Convention
June 5-7, Fairmont hotel, San Francisco.

Summer Home Furnishings Market
June 17-28, American Furniture Mart, Merchandise Mart, Chicago.

It's so Easy to See Why SPORLAN G VALVES with SELECTIVE CHARGES give PEAK PERFORMANCE on ALL REFRIGERATION INSTALLATIONS



It's the combination of Two SPORLAN Firsts that date back to 1934

One basic valve design that has been right from the start, plus constant refinement through engineering research.

Selective Charges, then an unheard of engineering concept, which today keep on proving that no one charge can operate on all applications.

"C" CHARGE
for suction temperatures ABOVE ZERO

"Z" CHARGE
for suction temperatures BELOW ZERO

"X" CHARGE
for extremely low temperatures

No wonder it's so easy to see why SPORLAN G-Valves with Selective Charges give PEAK PERFORMANCE on all refrigeration applications . . . they always have!

SEE THEM
at your Wholesaler's...
BUY THEM
along with the proper Sporlan Catch-Alls and Solenoid Valves and get Peak Performance Right Down the Line

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AIR CONDITIONING & REFRIGERATION NEWS

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'The Conscience of the Industry'

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VOLUME 80, NO. 14, SERIAL NO. 1,463, APRIL 8, 1957

They'll Do It Every Time
by Jimmy Hatlo
OH, BOY! AM I GLAD I GOT OUT OF THIS JOINT! OVER AT CRUDNEY & CO. WE GOT NO HOURS--I'M MY OWN BOSS--WE GOT A DOUBLE PENSION PLAN--TWO MONTHS' VACATION....
VERMIN LEFT BIGDOME & CO. FOR GREENER PASTURES AND LOVED TO RUB IT IN TO HIS OLD CO-WORKERS ABOUT HOW GOOD HIS NEW JOB WAS...
TODAY HE PAID HIS OLD PLACE OF BIZ ANOTHER VISIT....BUT HE SOUNDS DIFFERENT NOW...
THANX AND A TIP OF THE HATLO HAT TO LEW SCHWARTZ, 420 LEXINGTON AVE., NEW YORK, N.Y.
ER--LOOK, FRANK--UH--THAT CRUDNEY OUTFIT AIN'T WHAT IT WAS CRACKED UP TO BE--DYA THINK BIGDOME WOULD GIVE ME MY OLD JOB BACK?
THEY ALL COME HOME TO ROOST!
THE GRASS AIN'T SO GREEN NOW, HUH?
JIMMY HATLO
3-1
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Chief Problem of Industry Growth: Where Will We Get The Manpower?

Despite the tremendous upsurge in America's total population (due to the booming birth rate in postwar years) our current labor force is skimpy. It is showing the effects of the depressingly low birth rate of that unproductive depression period.

Furthermore, this situation will plague us for the next 10 years at least—because not enough young employes will be available anytime soon for reasons mentioned in the above paragraph, and the one following.

In 1954 there were fewer people entering the 21-year-age-bracket than sought employment during any year in the last 40 annums. Between 1954 and 1957, in the United States of America, there actually occurred a *population decrease* of more than a million citizens between the ages of 25 to 49.

Therefore, the problem of manning an enormously expanding economy with a progressively diminishing work force is becoming seriously acute, and will get "acuter."

True, there will be 25,134,000 more men, women, and children in our population by 1965. However, the number of young men and women entering our effective working force from now until then will be less than half that many people.

To push through the ambitious 70% increase in America's volume of goods and services (which economists are projecting for 1965) we shall need at least a 50% increase in personnel.

Furthermore, assuming 40 years of working time in the normal career expectancy of every man and employed woman, it is obvious that annually we must replace 20 out of each 100 currently employed, because a fifth of our employes—on the average—either will die or retire every year.

Along with the additional personnel required for predicted expansion, this replacement adds up to 70 new workers who must be recruited, trained, and developed (or retained) for each 100 now employed in our own companies, our industry, and the nation-at-large.

If we in this industry don't grow at least in pace with the national economy, other types of businesses (automobiles, electronics, chemurgy—for example) may meet those recruiting requirements. Hence, they could drive our industry downward in terms of relative position.

Obviously we won't have time to take it easy in the next five to 10 years in this urgent matter of capturing manpower for growth and survival.

Seldom in any typical annual report to stockholders do we find anything mentioned about this vital subject of keeping and acquiring sufficient manpower to keep a corporation alive. Yet, that dilemma may become the difference between a corporation's dynamic growth *with* the economy, or an unhappy spot in the cellar of America's commercial league.

If we — as enterprisers and industry leaders—don't keep and capture at least 70 new men loyal to our companies by 1965 for each 100 with us now, we'll fall behind not only our competitors, but *other industries.*

Where will we get them? Youngsters will be scarce—because so few were born in the 1930's. Women employes, likewise. Here's the only possible source: The "Over 50 Club."

Medical science is prolonging the lives and useful careers of older men astoundingly. Even so, industry in general still plays head-in-the-sand with this fact. Any corporation which doesn't revamp its policies to seek and hire vigorous oldsters is likely to wake up some bitter Monday three to five years from now with a depleted staff and its future behind it.

There just isn't any other place to go, during the next 10 years, to find expert "help." Nor should we put this fact so negatively. Men over 50—yes, and over 60—today are vigorous, knowledgeful, adaptable, and responsible.

Corporations spend big money on college campuses to recruit college graduates. At the same time they are shoving out the back door 65-year-old men who know far more than these young men can learn in 20 years.

Many such have lost jobs worthy of them because of mergers or unrealistic retirement policies. They are the hope of our future, and the MAIN CHANCE for any industry or corporation to grow—or even to stay alive.

Mr. Personnel Manager: Recruit or retain them while you can! Otherwise you'll wind up behind the 8-ball.

WANTS TO QUOTE RECENT EDITORIAL

Amana Refrigeration, Inc.
Amana, Iowa

Editor:

It was a pleasure to read your good editorial entitled "ADVERTISING IS A SOCIAL FORCE" in the March 4 issue of AIR CONDITIONING & REFRIGERATION NEWS. We may have occasion to use all or part of this article, and therefore respectfully request your permission to reproduce it.

WILLIAM HOUSEAL

ALSO FINDS FAULT WITH U.S. SPENDING

Dolgeville, N. Y.

Editor:

Your editorial in the March 11 issue of AIR CONDITIONING & REFRIGERATION NEWS was very timely. All of us should be aware of the vast amounts which our Government is spending and the useless way in which our resources are being dissipated.

In order to acquaint friends and relatives with these conditions, I would very much like to have several dozen reprints of this editorial. I imagine that many other readers would also like to obtain them if they were available.

If a reprint is made, would you kindly supply me with two or three dozen copies?

H. R. BOONE

PAYS TWICE; SURE TO GET 'NEWS'

Curtis, Morris & Safford
New York, N. Y.

Editor:

This acknowledges the notice that I inadvertently paid twice for the three-year renewal subscription.

Of course, the double payment is nothing more than an exemplification of my excessive enthusiasm for the publication, at least that is why a psychiatrist would probably conclude. Seriously, however, no one in the industry can afford to do without REFRIGERATION NEWS, and I know of no publication in any industry which does a better job.

HAROLD L. STULTS

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

AIR CONDITIONING & REFRIGERATION NEWS 4-8-57
450 W. Fort St., Detroit 26, Mich.

Gentlemen: Send the NEWS every week for one year. ☐ $6.00 enclosed ☐ Bill me ☐ Bill Company.

Name.....
Company.....
Street.....
City ..... Zone ..... State .....
IMPORTANT: Company's Type of Business.....

SELL

WESTINGHOUSE

...the only

"REALLY-NEW"

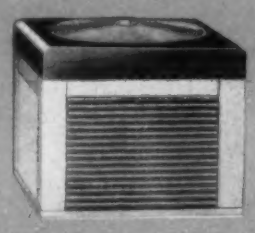
air conditioning line for

1957

TAKE A LOOK...

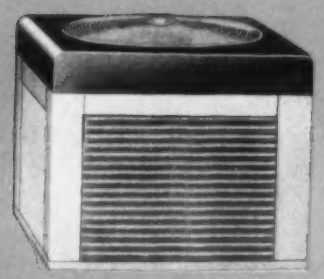
FOR RESIDENTIAL SALES!

You get ...FROM



BUDGET 301
*18,500 to 23,000 BTU/Hr.

SUPER 352
23,500 to 32,000 BTU/Hr.



BUDGET 401
32,000 to 39,000 BTU/Hr.

*Lower Figures are ASRE Ratings

Now, you've got the edge over competitors who *try to sell* all prospects, regardless of need, with old-fashioned 2, 3, and 5 HP units. While other manufacturers give you but 3 inflexible units – Westinghouse gives you 7! You get a complete cooling range from 18,500 to 86,000 BTU's per hour in a twin price line of Budget and Super cooling models. Air cooled, they need no water . . . easy to install outside the house, they waste no living space . . . whisper quiet, they cool automatically. What's more, they combine with any forced warm air heating system – using the same ducts – to give economical year-round air conditioning. And remember, these units are perfect for many commercial installations, too. So, wherever you sell, whoever your customer . . . you can price, sell and install the one unit that is "just right" for the job, and you can do it at a profit!

THE RIGHT COOLING UNIT FOR EVERY HOME AND BUDGET

EASE-MASTER UNITS
For hide-a-way installation in attic, utility room or suspended from ceiling. Air cooled, delivers 18.000 to 34,000 BTU's per hour.

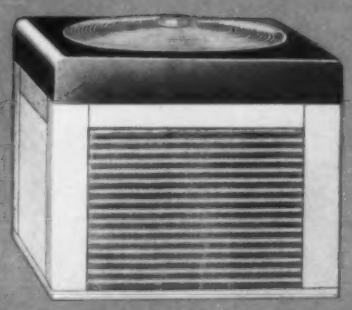
FLEX-MASTER UNITS
Ideal for the larger home in extra hot climates. Air or water-cooled, delivers 30,000 to 110,000 BTU's per hour.

VALUE-MASTER UNITS
Heat and cool—automatically! Available with oil or gas-fired furnace unit. Cooling range 24,000 to 38,000 BTU's per hour. Gas-input 90,000 to 130,000 BTU/Hr., output 84,000 to 112,000 BTU/Hr.

"just right" cooling

BUDGET 301 TO SUPER 802!

SUPER 452
36,500 to 50,000 BTU/Hr.

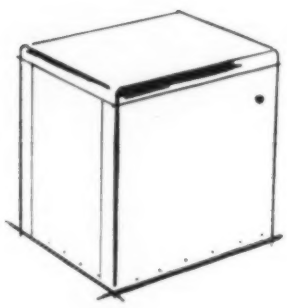


BUDGET 601
50,000 to 62,000 BTU/Hr.

SUPER 652
54,500 to 67,000 BTU/Hr.

SUPER 802
74,500 to 86,000 BTU/Hr.

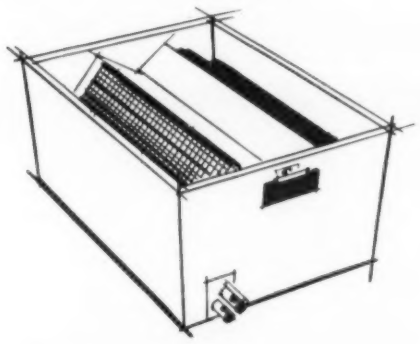
You don't have to sell <u>too much or too little</u>– with Westinghouse you profit with "Just Right" cooling capacity!



AIR-COOLED CONDENSING UNITS

These handsome beige-and-charcoal cabinets house all moving parts – compressor and fan – outside the home. Exhaust air *up and away* from the house for *Whisper quiet* cooling, no shrubbery burn. One of these 7 basic units combines with the one best . . .

+



COOLING COIL

Vertical, horizontal or blower coil unit – available in a complete range of air handling capacities. To give each of your customers . . .

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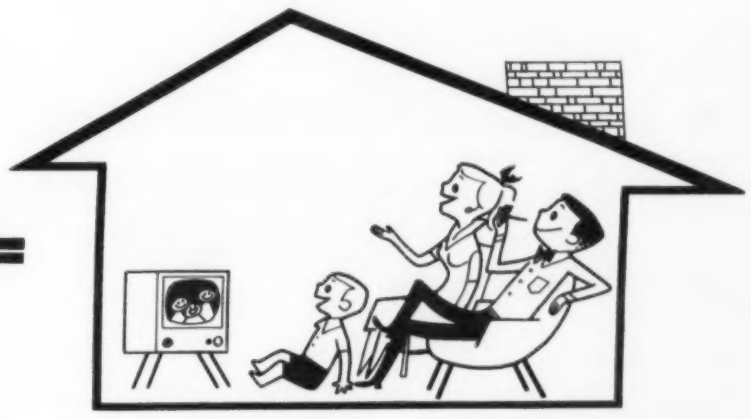
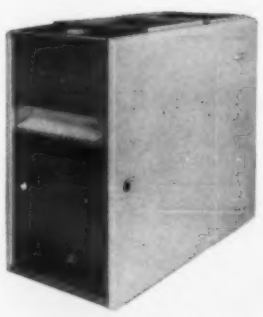


COMPLETE HOME COOLING

Maximum comfort throughout the house – 24 hours a day during hottest summer weather. Masters both heat and humidity as only "Just Right" air conditioning can.

. . . AND AN ALL-NEW GAS AND OIL-FIRED FURNACE LINE!

These new Westinghouse furnaces are finished in two-tone color to blend with the cooling units. Gas or oil-fired for easy installation in basement, utility room, crawl space or attic . . . you'll find they meet the specific heating needs of your customers – wherever you sell.

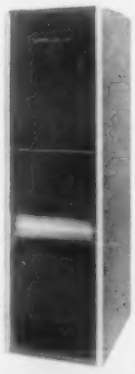


NEW BASEMENT UNITS

Gas or oil-fired . . . ideal for basement installations where overhead clearance is limited.
Heating Capacity – BTU/Hr.
Gas-Fired (Input) 85,000-200,000
Oil-Fired (Output) 85,000-134,000

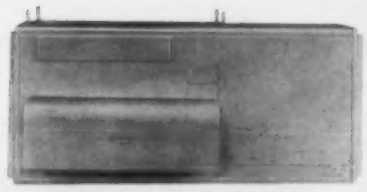
NEW UTILITY UNITS

Gas or oil-fired . . . they are "File-Cabinet-Size." Approved for zero clearance installations in closets or utility rooms.
Heating Capacity – BTU/Hr.
Gas-Fired (Input) 85,000-150,000
Oil-Fired (Output) 85,000-123,000



NEW COUNTER-FLOW UNITS

Oil-fired . . . specifically designed for perimeter type residential heating systems.
Heating Capacity – BTU/Hr.
Gas-Fired (Input) 85,000-125,000
Oil-Fired (Output) 85,000-123,000



NEW HORIZONTAL UNITS

Gas-fired . . . need no floor space. Mount in attics, crawl spaces, closets or suspended from ceilings.
Heating Capacity – BTU/Hr.
Gas-Fired (Input) 80,000-140,000

PLUS...

FOR COMMERCIAL SALES!

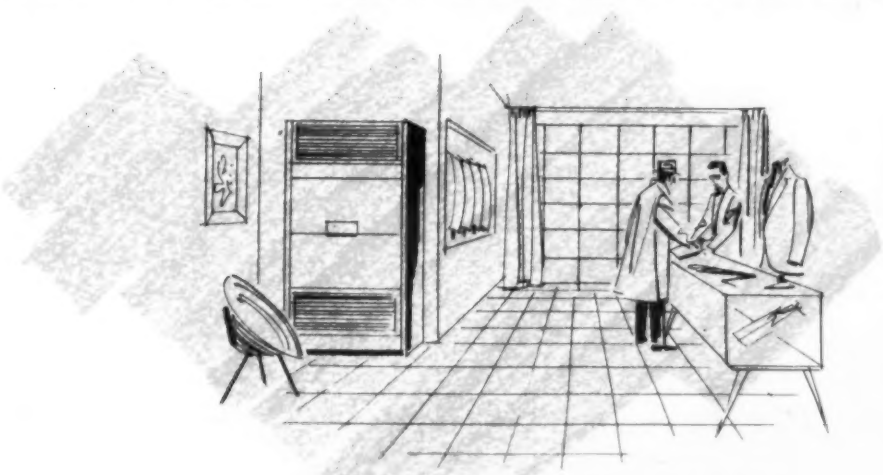
YOU GET ALL THE

Excitement of Color

Plus the Industry's Quietest Air Conditioner... Air or Water-cooled

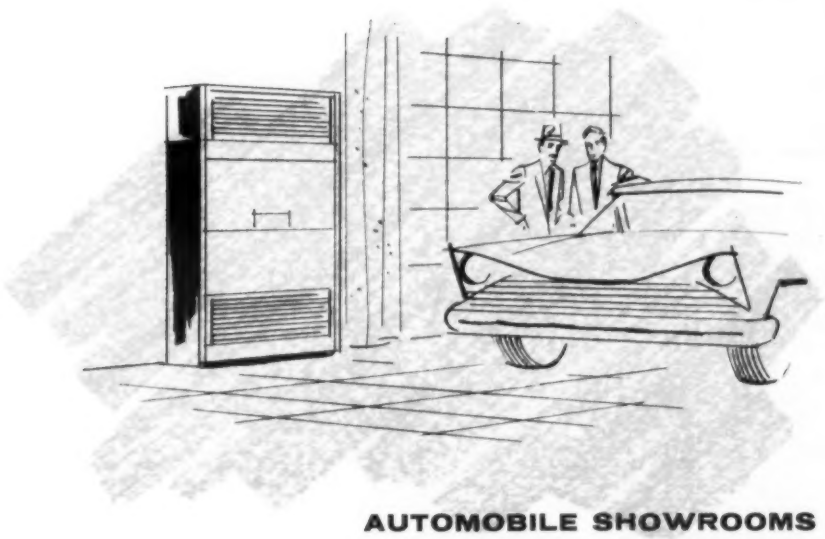
Now, you can have the right color combination for every customer . . . 15 combinations of two-tone color and harmonizing trim to blend with the interior decor of any store or office. Smartly styled in smoothly flowing lines, the new Style-Master units can be easily installed in a minimum of space – with or without ducts. They deliver maximum cool comfort quietly and automatically – with style and beauty.

NOW, YOU CAN MATCH THE DECOR OF...



MEN'S SHOPS

BEAUTY PARLORS



AUTOMOBILE SHOWROOMS

FURNITURE STORES

– AND MORE...

FLEX-MASTER
Includes all the big cooling features of the Style-Master . . . comes in two-tone beige and charcoal color combination.

CUSTOM-MASTER
For extra large cooling requirements in store, office or factory.

EVERYTHING YOU NEED...

For the Most Profitable Air Conditioning Season Ever!

WESTINGHOUSE GIVES YOU:

1. Fast Delivery – direct-from-factory or from distributor nearest you.
You get the unit you want, where you want it – when you want it.

2. Sales Training – for you and your staff. Consumer selling literature, visual sales presentation for your use, heat-load estimating form, duct calculators – everything you need.

3. Technical Aid – from factory sales engineers. They will help you solve any air conditioning problem . . . show you how to get maximum efficiency with minimum effort.

4. Finance Plans – to fit your sales and business needs.

5. Advertising – where it counts most – in your own local selling area.
Westinghouse backs you with powerful regional advertising, plus – a liberal co-op ad program.

6. Sales Promotion – that builds your name and business.
Westinghouse brings you the plan and materials for your own dynamic promotion program.

7. Profits – with the only "Really-New" family in the air conditioning industry – for every residential and commercial prospect.

For further information on the 1957 Westinghouse line, write:

Westinghouse Air Conditioning Div.
Dept. 1 D 8
P. O. Box 510
Staunton, Virginia

NAME_____

ADDRESS_____

CITY_____ ZONE___ STATE____

YOU CAN BE **SURE**... IF IT'S

Westinghouse

AIR CONDITIONING DIVISION STAUNTON, VIRGINIA

Now Representing...

Perfection Industries, Div. of Hupp Corp.—BECK & GREGG HARDWARE CO., Atlanta, has been appointed Georgia distributor for the firm's line of gas, fuel oil, and kerosene portable heaters, kerosene ranges, and stoves.

Curtis Mfg. Co.—DALE WEITMAN, who has been engaged in the engineering and sale of commercial and industrial refrigeration and air conditioning for seven years, has been named manufacturer's representative.

Servel, Inc.—Appointment of two manufacturer's representative organizations for Servel electric "Wonderbar" refrigerette was announced.

ROBERT W. DANSBY CO., Dallas, will cover all of Arkansas, Louisiana, Mississippi, Oklahoma, and Texas.

FLOYD YUDELSON CO., Los Angeles, will handle all of Arizona and Nevada, and 45 counties in northern California.

Schaefer, Inc.—Three new distributors have been appointed to handle ice cream cabinets for the firm.

STORE EQUIPMENT SALES, Detroit, will distribute in eastern Michigan.

ROY REFRIGERATION SERVICE, Cleveland, will serve ice cream manufacturers in that area.

EASTERN ICE CREAM CABINET CORP., Philadelphia, will distribute in that area.

Novi Sales & Service Co., Inc. (Los Angeles)—Ten franchised dealers have been appointed for automotive air conditioning and truck refrigeration sales and service:

KEN CORNELIUS, Bakersfield, Calif.; CHAD JOHNSON, Burbank, Calif.; CITY AUTO SERVICE, Cathedral City, Calif.; ED THRASHER, Corona, Calif.; M & W SERVICE CO., Fresno, Calif.; SUSKI & SAKEMI, Indio, Calif.; J & M REFRIGERATION, Las Vegas, Nev.; SUTTON BROS. & HAUN, Long Beach, Calif.; WELCH SALES & SERVICE, San Bernardino, Calif.; M. C. PHILLIPS, Visalia, Calif.

Trion, Inc.—New representatives for commercial and industrial units are EDWARDS AIR CONDITIONING SALES CO., Cincinnati, and TRI-STATE EQUIPMENT CO., Preakness, N. J.

Temco, Inc.—H. A. McRAE & CO., Troy, N. Y., has been named Hudson Valley distributor for the full line of heaters, furnaces, and air conditioning units.

Tube Reducing Corp. (Wallington, N. J.)—INDUSTRIAL PRODUCTS SALES, INC. of Akron, Ohio has been appointed sales agency for the firm's rockdrawn tubing line and will cover Ohio, western Michigan, and northern Kentucky.

York Corp., subsidiary of Borg-Warner Corp.—Two new franchised associates for industrial products have been announced.

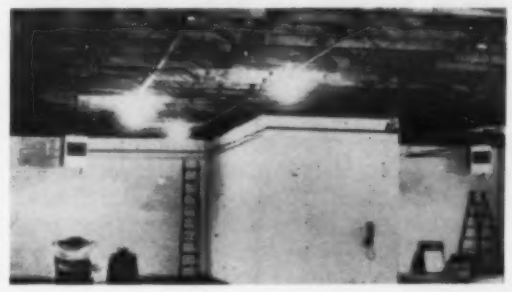
KOOLERAIRE CONDITIONING CO., INC., New York City, will handle sale of York equipment in Manhattan north to 14th St.

ELECTRIC PRODUCTS, INC., Jersey City, N. J., will handle sale of York units in Bergen, Hudson, Passaic, and Sussex counties in New Jersey, and Richmond and Rockland counties in New York.

Refrigeration Appliances, Inc.—HUBERT R. HUNT of Tri-Cities Engineering Co., Bristol, Va., has been named sales representative for Virginia, West Virginia, and North and South Carolina for this manufacturer of "Krack" heat transfer equipment.

Cleaver-Brooks Co.—NORBERT W. ENSLEN CO., Dayton, has been appointed manufacturer's representative for the sale of Cleaver-Brooks boiler equipment.

Second 'Ceiling' Helps 'Heat' Large Room



A LARGE room at Canton Container Corp., Canton, Ohio, heated by space heaters could not sufficiently provide comfortable room temperature even though the units were in constant operation.

SAME ROOM after installation of "Visqueen" polyethylene film as a "second ceiling." Installation of film warmed the room 10-15° and provided comfortable temperatures with less heating cost.

LARKIN MEANS LOW OPERATING COSTS

FROST-O-TROL® AUTOMATIC HOT GAS DEFROSTER SYSTEM

The purchase price of any product is often misleading, for it precludes the cost of long-run operation. All Larkin products are engineered for the lowest possible operating costs, yet they are priced right. That's why Larkin leads the field for long-run, low-cost operation.

•

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

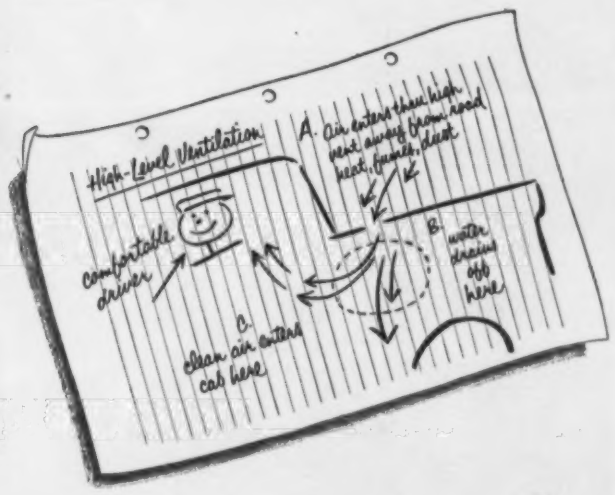
LARKIN COILS INC.

519 MEMORIAL DR., S.E. • ATLANTA, GA.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

in a Chevy panel, even the air is better!


High-Level Ventilation
A. Air enters here high, away from road heat, fumes, dust
comfortable driver
B. water drains off here
C. clean air enters cab here

...more evidence that Chevrolet Task•Force Trucks are engineered better and built better for bigger savings!

These features give you extra comfort and safety behind the wheel, extra savings on truck maintenance. And they're proof that the most modern trucks for your money are Chevrolets!

The drawing "doodled" above shows how Chevy's High-Level ventilation provides a *comfortable* interior . . . and the numbers in the big picture point out other advantages equally as good to have around you when you haul! They include:

1 *A driver compartment roof that's specially built for safer, more comfortable hauling.* Sturdy all-steel turret-top construction adds to safety; inner reinforcement provides a "dead air chamber" that insulates the overhead against heat.

2 *A gleaming, durable baked enamel outside finish.* Here's the reason your Chevy's exterior will resist wear better, look like new longer!

3 *A soft-riding seat that beats the bumps!* Deep-comfort coil springs and a padded, form-fitting seat back let you take it easy on tough jobs!

4 *A body that's rustproofed to last!* Doors and similar surfaces are rustproofed on the *inside* as well as on the outside by immersion.

5 *Concealed Safety Steps for convenience.* Inside each door, they give you firmer footing, make entering or leaving the truck easier and safer.

6 *An undercoated floor, cowl side panels and fender flanges.* Most exposed surfaces on the underside of the body are protected by an anti-rust coating.

7 *A non-glare instrument panel to make driving safer!* The textured finish on upper portion of Chevy's instrument panel reduces blinding sun reflections, minimizes eyestrain.

8 *A reliable 2-speed electric windshield wiper* on each side.* Powered by electricity, their action remains *constant* under all conditions.

Such advantages as these (we've shown only a few) combine to make *everything* better in a 1957 Chevrolet truck! You'll see for yourself when you visit your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**Optional at extra cost.*

...biggest sellers because they're the biggest savers! CHEVROLET

CHEVROLET TASK•FORCE 57 TRUCKS

Friez To Build Air Conditioned Plant To Meet Precision Product Demand

BALTIMORE—Plans for construction of a new manufacturing, engineering, and research facility, part of a million-dollar expansion program, have been announced by the Friez Instrument Div. of Bendix Aviation Corp.

Engineering offices, laboratories, and precision instrument assembly and test facilities of the new addition, to be ready for occupancy in December, will be completely air conditioned. The engineering department will occupy the lower level of the two-story addition.

The second story of the building will be devoted entirely to manufacturing with certain special areas scientifically designed for the elimination of dust and control of temperature, humidity, and noise level there.

LeRoy D. Kiley, general manager of the division, said the new facility will add 66,000 sq. ft. to the present 100,000-sq. ft. plant. It is being built to meet the increased demand for precision products, including meteorological and aircraft flight instruments, electro-mechanical missile components, light amplifiers, and closed circuit TV systems, such as the "Lumicon," as well as other complex airborne equipment.

"The increased space," he said, "will offer excellent career opportunities for several hundred new employes, including engineers and scientists." He said the engineering area alone is designed to provide for 300 employes.

Delco Products To Market Etched Foil Electrolytic Capacitor

DAYTON — Delco Products Div. of General Motors has announced plans to enter the market of etched foil electrolytic capacitors, according to Mearick Funkhouser, chief engineer of the firm.

The new capacitor's principal advantage is its small and compact design, according to the firm. Major use of the capacitor is to give a boost to appliance and other single phase fractional horsepower motors which are required to start under heavy loads, it was pointed out.

Facilities at Delco Products are now being readied for pilot production, with volume production scheduled for late this summer, the manufacturer stated.

Far East Air Force Plans Maintenance Conference

FUCHU, Japan — A six-day conference on operation and maintenance of air conditioning, refrigeration, and heating equipment will be held for Air Force personnel in the Far East at Fuchu Air Station here April 10 to 17, according to Maj. D. C. Oldershaw, deputy assistant chief staff, Pacific Air Force/ Far East Air Forces.

First three days of the conference will be devoted to air conditioning and refrigeration; last three to heating.

Among topics of discussion will be preventive maintenance, chemical cleaning of heat transfer equipment, supply problems in the field, safety and health hazards, corrosion, problems peculiar to Japanese equipment, and manpower authorization for the command.

Trane Establishes Packaged Unit Supply Depots at 5 Points

LA CROSSE, Wis. — The Trane Co. has established regional warehouse distributing centers in New York, Chattanooga, Kansas City, Dallas, and Cleveland, President D. C. Minard announced.

The newly-established supply depots will serve as centers for the distribution of Trane package air conditioners. In addition, self-contained units will continue to be available at Trane warehouses in Scranton, Pa. and La Crosse, Wis.

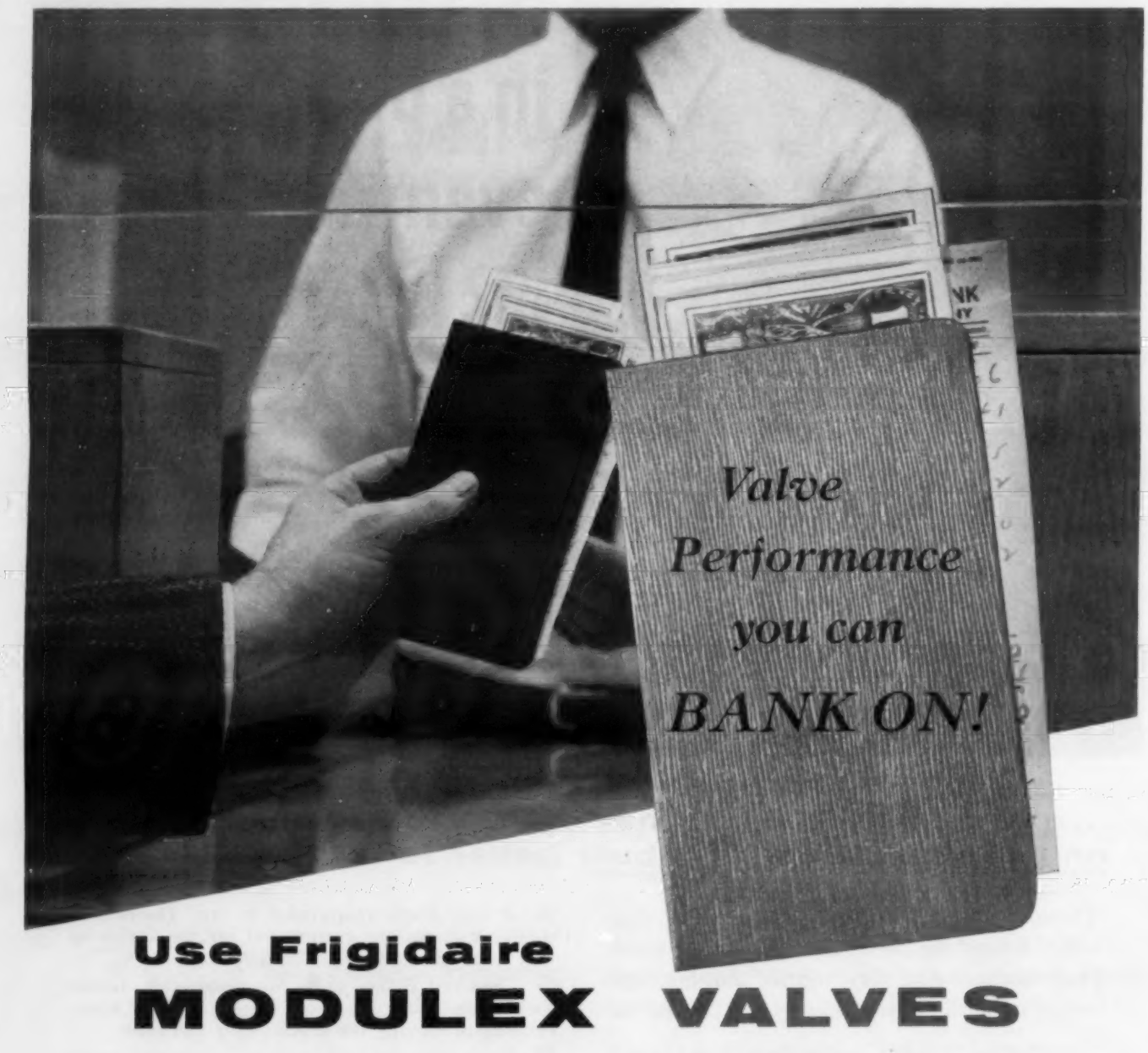
"In effect," noted Minard, "we now have seven strategically selected locations through which our 93 branch offices can achieve quicker shipment of self-contained air conditioners at reduced freight rates. We believe this move will enable our branch offices to better their competitive status in this facet of the air conditioning business."

Sales, Service Firms Form Rocky Mountain NISA Unit

DENVER, A new organization of independent electric motor, generator, and transformer service and sales firms in the Colorado area has been formed by regional members of the National Industrial Service Association, Inc.

The new group, to be known as the Rocky Mountain Chapter of NISA, will receive its charter at the national NISA convention in Buffalo, May 12-15. It is the 31st chapter of the 24-year-old international trade association.

Officers of the Rocky Mountain Chapter, elected at an organizational meeting at the Albany hotel in Denver, are: President, Damon R. Ward of Ward Electric Co., Denver; vice president, Earl T. Baker of Baker Electric Co., Denver; and secretary - treasurer, Malcolm Logan of Rocky Mountain Electric Service, Durango, Colo.



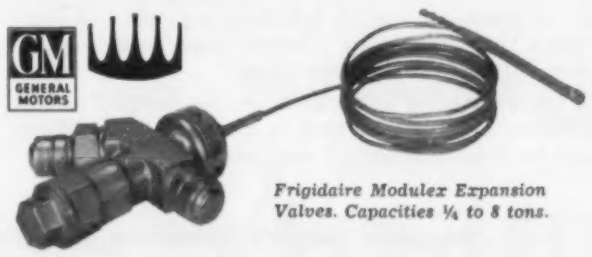
Use Frigidaire
MODULEX VALVES

In selecting expansion valves, or any other type of parts, you're interested in only one kind of performance: the kind that shows up in neat black figures in *your* bank book.

Count on Frigidaire Modulex Valves for that kind of performance. Thousands do.

They help you create customer confidence and satisfaction through precise refrigeration control under all operating conditions. They save your time on every job, because they can be installed anywhere, in any position. Easily adjusted, too. And their outstanding reliability minimizes costly call-backs to protect your profits.

Use Frigidaire Modulex Valves exclusively. Order through your Frigidaire Distributor. Or write FRIGIDAIRE DIVISION, Dept. A, *General Motors Corporation*, Dayton 1, Ohio.



Frigidaire Modulex Expansion Valves. Capacities ¼ to 8 tons.

FRIGIDAIRE
PARTS AND ACCESSORIES

All Larkin refrigeration and air conditioning equipment is designed to give peak performance at low operating costs, whatever the requirements. The same organization that produced the original, patented cross-fin coil maintains a constant effort for better, more efficient design. Just one more reason why Larkin leads.

•

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.

For more information about products advertised on this page use Information Center, page 31.

Brunner Describes Semi-Hermetic Units

——KEY NO. S-420——

UTICA, N. Y. — Semi-hermetic condensing units and motor compressors from ¼ to 3 hp. are described in a new bulletin of the Brunner Mfg. Co. Units included in the bulletin are air cooled, water cooled, and air-and-water cooled.

Bulletin G-124R includes specifications, capacity data, and other features of these "Brunner-metic" units.

Foster Circular Covers Self-Contained Kitchens

——KEY NO. S-421——

HUDSON, N. Y.—Foster Refrigerator Corp. recently published a new circular "The Modern Self-Contained Kitchen Way to Profits."

This informative brochure describes one of the major problems of food service in small space and offers the perfect solution—Foster's "Self-Contained Kitchen" line.

Foster's basic line of 20 self-contained and remote refrigerator and freezer models is illustrated along with complete dimensions and specifications. There's a model to answer almost every need for counter refrigeration.

Bulletin Outlines 3 Water Cooler Lines

——KEY NO. S-422——

NEW YORK CITY—Three distinct lines of electric drinking water coolers and several cooler accessories are described in bulletin No. 4D offered by Cordley & Hayes.

The four-page, illustrated bulletin gives specifications, including capacities for the 18 coolers in the Cordley compact, standard,, and remote lines. Also included is information on Cordley's line of fillers and fountains.

The two-color bulletin also gives the essentials of how to select the right water cooler for a specific application; tells how to determine capacity and where to put the cooler.

Circular Illustrates Flexible Air Ducts

——KEY NO. S-423——

HARTFORD, Conn. — A new four-page circular (Form 591) that describes in detail the various types of "Wiremold" flexible air duct used for air conditioning, fume and dust exhaust, and corrosive fumes, is now available from the Wiremold Co. here.

Actual in-service photographs illustrate product versatility, and qualified sales engineers representing the Air Duct Div. of Wiremold in the U. S. and Canada are listed.

'Prest-O-Matic' Cold Storage Door Cataloged

——KEY NO. S-424——

NEWARK, N. J. — Clark Door Co. recently issued two new catalogs describing its line of automatic door equipment.

One refers to "Prest-O-Matic" cold storage door assemblies, and contains photographs, drawings, and suggested specifications for the door.

Vapor Barrier Coating Covered In Detail

——KEY NO. S-425——

CINCINNATI — Ellis & Watts, Inc. has available a new bulletin which describes in detail vapor barrier coating which is designed to control the transmission rate of water vapor through any type of building material.

This is a particularly important factor in increasing the efficiency of dehumidified storage areas, the firm noted.

According to the manufacturer, this new vapor barrier coating is guaranteed to retard the rate of vapor transmission to less than 0.3 grains per sq. ft. per hour at 1 in. mercury vapor differential.

Bulletin describes how coating can be applied to the interior or exterior surface of any type of building material. It is guaranteed to withstand all weather conditions without chipping, cracking, or peeling.

Booklet Summarizes Power Operated Units

——KEY NO. S-426——

BUFFALO—Niagara Machine & Tool Works here has published an illustrated 40-page booklet (203) which summarizes important data on Niagara power operated machines for plate and sheet metal work.

The new pocket-sized booklet includes basic specification charts, tabulated for easy reading, which provide quick reference to all principal models.

Selecting School Controls Discussed

——KEY NO. S-427——

ROCKFORD, Ill.—How to determine the selection of proper controls for heating and ventilating systems in schools and colleges is discussed and illustrated in non-technical language in a new 16-page booklet, F 7773, recently issued by Barber-Colman Co.

Illustrated with photographs and diagrams, the booklet covers the control of convector systems, direct-fired warm air systems, zone systems, unit ventilators, and the application of Control Centers for simplified installation and operation, the manufacturer announced.

Brochure Diagrams Air Source Heat Pump

——KEY NO. S-428——

YORK, Pa. — A 12-page illustrated brochure describing the York compound compression air source heat pump for commercial and industrial use has been published by York Corp., subsidiary of Borg-Warner.

The brochure contains system diagrams, cost analysis charts, and performance charts showing heat output and power consumption comparisons between conventional single stage heat pump systems and the multi-stage York system as well as illustrations of components used in the York system.

Potentiometer Data Offered In Sheet

——KEY NO. S-429——

PHILADELPHIA — Concise information about the electronic "Speedomax G" potentiometer instruments, which indicate thermocouple temperatures at the flick of a switch on a drum-type scale 25½ in. long, is presented in an illustrated four-page data sheet recently published by Leeds & Northrup Co.

Sheet ND46-33(23) completely lists features, specifications, and ranges for (1) a standard-case instrument with door-mounted switches, (2) a small-case instrument used with separately-mounted switches, and (3) a console instrument for desk-top mounting, for as many as 200 thermocouple points.

Airtemp Prepares 6 Product Folders

——KEY NO. S-4210——

DAYTON—A "Dial Springtime Anytime" series of colorful new product folders has been prepared by Airtemp Division of Chrysler Corp.

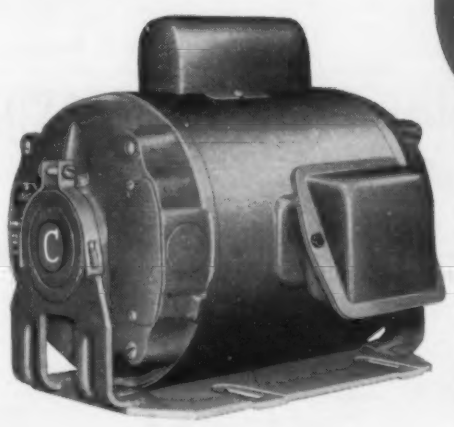
Six in number, the folders illustrate and contain specification information on the firm's 1957 commercial and residential air conditioning product lines, it was noted.

Form LL-149 contains information on new 2 and 3-hp. 1100 series packaged air conditioners. Form LL-150 covers the firm's air-cooled central station units. LL-153 features gas-fired heating units; LL-154 oil-fired furnaces; LL-241 commercial water-cooled air conditioners of 3 to 30 tons; and LL-243 commercial air-cooled air conditioning units.

Your choice of normal or low starting current... with Performance-Rated

Century

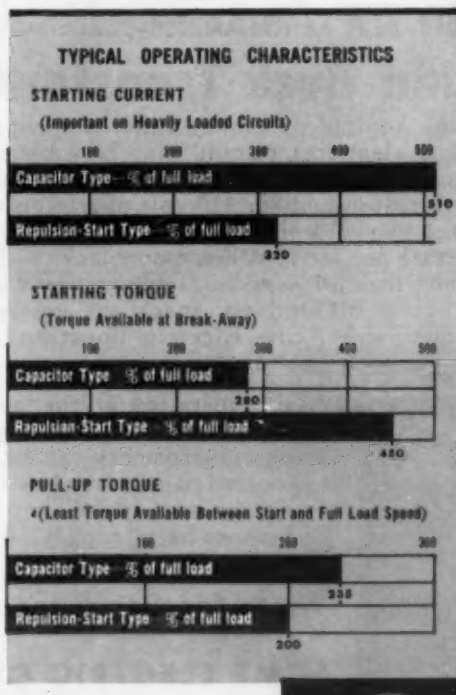
HIGH TORQUE, SINGLE-PHASE MOTORS



Capacitor Motors... ⅛ to 20 H.P. provide high starting torque, high pull-up torque and require normal starting current. They are available in drip proof, dust proof and explosion proof enclosures.

Even if you have severe starting current limitations, you can select the torque you need for sure starts and smooth pull-up to speed from the Century Performance-Rated Single-Phase line (see bar chart below for operating characteristics of two types of Century Single-Phase Motors).

Whatever Your Motor Job . . . there's a Century Motor Performance-Rated to handle it with top effectiveness. Contact your nearby Century branch office or Authorized Distributor.



Repulsion Start, Induction Motors (type RS)... ½ to 7½ H.P. provide very high starting torque, yet require unusually low starting current. They are available in drip proof and splash proof enclosures.

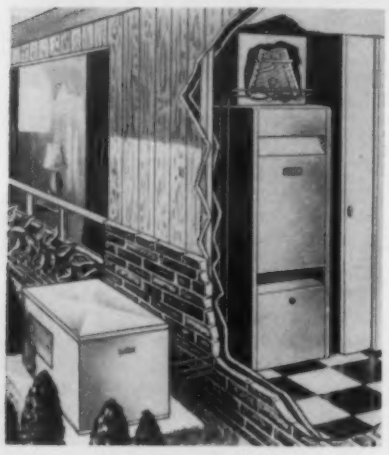
Performance-Rated© Motors ⅛ to 400 H.P.

CE-32

CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri • *Offices and Stock Points in Principal Cities*

Temco Expands Summer Conditioning Line



——KEY NO. G-420——

NASHVILLE, Tenn. — Temco, Inc. has made available a wider range of air conditioning equipment for use with its forced air furnaces or as independent summer cooling units. The line now includes a suspended air-cooled air handling unit for commercial application and self-contained multi-zone units for home use.

Multi-zone units are in 2 and 4-ton capacity and are available with pre-fab ductwork. It is the installation for cases where the existing heating system does not permit combination weather conditioning, and can be installed either in the attic or crawl space, the company stated.

Available for use with Temco forced-air furnaces or with existing furnace installations are Temco air-cooled units of 2, 3, and 5-ton capacity. In instances where the furnace does not have adequate blower capacity to handle summer cooling, a separate air handling unit is available, permitting use of the existing ductwork. The air conditioning units now feature pre-charged lines and pre-charged components.

Heat exchangers in Temco furnaces are finished in "Ceramic-Clad," a high-temperature porcelain enamel "that will never burn out or rust," it was noted. This eliminates the problem of corrosion from condensation that often accompanies summer cooling.

Small Case Merchandises Ice Cream Novelties

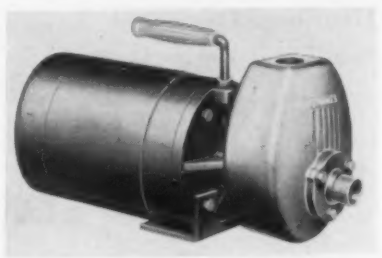
——KEY NO. G-421——

BALLY, Pa.—Introduction of a new, small, low temperature display case, designed for the merchandising of ice cream novelties (ice cream pies, sandwiches, popsicles, etc.) in theater lobbies, has been announced by Bally Case & Cooler Co.

This new case, named the "Theater Ice Cream Merchandiser," is 26 in. deep and 30 in. long. It has 4.3 cu. ft. of refrigerated display space that holds approximately 875 novelties.

Bally Theater ice cream merchandiser is of all welded steel frame construction and the exterior is finished with porcelain enamel in a decorators pastel shade of tan. The entire interior is lined with stainless stel. By releasing an interior locking device, the front glass is quickly removed for self-service and can be used effectively as a "frozen food spot special case" for supermarkets, the company said.

Sliding mirrored doors on the back of the case make it easy to work out of for clerk service.



Offers Close-Coupled Centrifugal Pump

——KEY NO. G-423——

MANSFIELD, Ohio — A new electrically driven close-coupled pump was recently introduced here by Barnes Mfg. Co. as an addition to its self-priming centrifugal line.

The new pump, called "Close-Coupled" model 1MAE, is direct-connected to a ⅓-hp., 115 v., 60 cycle, split-phase motor which delivers 3,450 r.p.m. Pump discharges 1,440 g.p.h. at 24-ft. head, it was noted. A balanced angle grip on top serves to make the unit portable. It features a discharge outlet for use with a garden hose.

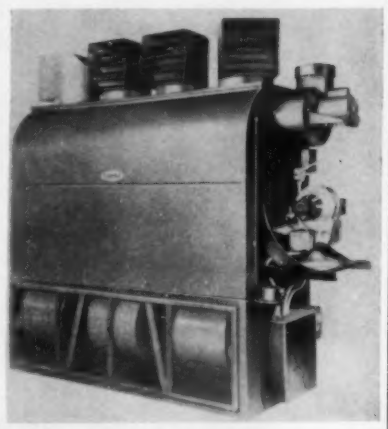
Package Heating Unit Needs No Central Boiler

——KEY NO. G-422——

SYRACUSE, N. Y. — Carrier Corp. here recently introduced a central heating plant for large-area buildings with its new line of direct-fired heat diffusers.

No central boiler is needed for this high capacity, factory wired, and pre-fired heating package, the company said. Only fuel and electrical connections need be made and then the unit vented for operation.

Available in any of 10 sizes burning either gas or oil and delivering from 300,000 to 2,000,000 B.t.u., the unit is said to offer a wide choice of installations from wall or ceiling suspension to floor mounting in a building.



NOW the 888 hermetic eye* double port sight glass

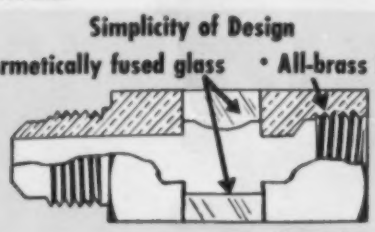
with revolutionary hermetically fused glass-to-brass construction . . . no gaskets, joints or fittings

Another great stride in leakproof refrigeration installations comes with the Superior 888 *hermetic eye double port sight glass.* Here is the perfect hermetic bonding of glass-to-brass—no gaskets, joints, solder seals or fittings.

Tested to more than 3000 p.s.i., it assures leakproof operation. Double port design for clear-through vision—the word FULL clearly visible only when system is charged with refrigerant. The special heat-resistant glass possesses high tensile strength. Available in ¼" and ⅜" male-to-male and male-to-female SAE flare.

*Trademark

Simplicity of Design
• Hermetically fused glass • All-brass body



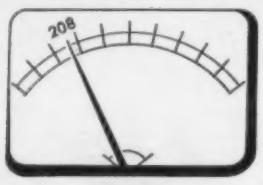
(Patents Pending)

LOOK FOR THE 888 HERMETIC EYE AT LEADING WHOLESALERS IN THE INDUSTRY

Superior valve and fittings co.
Pittsburgh 26, Pennsylvania

WHEN LINE VOLTAGE MEASURES

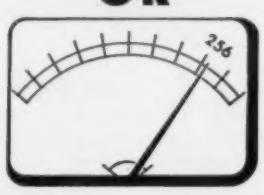
BELOW



NORMAL

OR

ABOVE



NORMAL

YOU NEED AN Acme Electric Boost and Buck Transformer

Air conditioning equipment cannot function properly if connected to an electrical circuit that is substantially below or in excess of the voltage of the motors. A one-ton unit with a motor designed for 230 volt operation should not be connected to a 208 volt circuit with the expectation that it will operate properly. When motor lacks sufficient torque, runs more than a few seconds on starting winding, overheats, or cycles off-and-on, check the voltage and install the proper size Acme Electric Boost and Buck transformer to correct the trouble.

Easily installed at the point of use, Acme Electric Boost and Buck transformers can be interconnected to correct a low voltage condition or a condition of excessive voltage supply. They're compact, inexpensive.

Write for Boost and Buck transformer catalog.

ACME ELECTRIC CORP.
924 WATER STREET
CUBA, N. Y.

Acme Electric TRANSFORMERS

broader applications
wider markets
bigger profits !

WHEN YOU CUSTOM-ENGINEER

REMOTE WATER COOLERS by Temprite

Install Temprite Remote Coolers on overhead wall brackets. Save floor space. Connect to multiple bubblers.

For restaurant fast cold water service. Single unit serves extra stations, saves waitress' steps, helps boost turnover.

Ideal for accurate control of water temperature in photo and X-ray processing. 14 to 72 g.p.h. All UL approved.

TEMPRITE PRODUCTS CORPORATION
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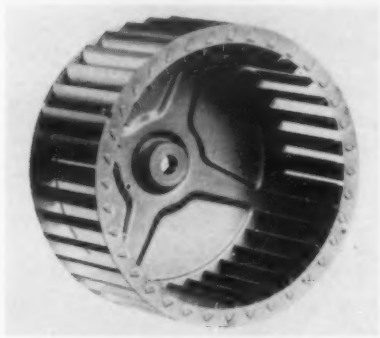
Company name
My name
Address
City State

'Tab-Lock' Blower Wheels Offer Deeper Blades



——KEY NO. G-424——

TORRINGTON, Conn. — "Tab Lock" series of blower wheels now offered by Torrington Mfg. Co. are designed to provide inherently high performance for a given space occupied in air conditioning, heating and ventilating units, and appliances.

Tab Lock wheel's space efficiency is provided by its individually-bladed construction, in which increased air delivery is achieved with blades that are deepr and with a wider working area in a given over-all width and diameter, the company said.

New 36-bladed Torrington blower wheels are available in 10 models, with diameters of 6 5/16 in., 7 3/32 in., 8 in., and various widths. A 44-bladed model with 10 3/4 in. o.d. and 1 31/32 in. width is also provided in this series. The Tab Lock wheel may be single or double width, steel or aluminum, and may have either plain finish, one-color spray lacquer, or zinc-plate.

Coleman Develops 6 Gas-Fired Wall Heaters

——KEY NO. G-425——

WICHITA, Kan.—Six new gas-fired wall heaters now being manufactured by Coleman Co., Inc., are engineered for high efficiency and maximum safety, it was announced.

All models are approved under the new 1957 requirements of the American Gas Association.

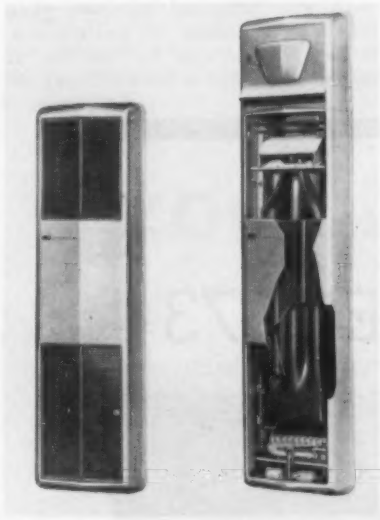
Four single wall heaters including two with rear register attachments, and two dual wall units make up the new Coleman line. All are designed to fit between wall studs on 16-in. centers. Single wall units have input ratings of 25,000 and 36,000 B.t.u. Dual wall models are rated at 50,000 and 62,500 B.t.u.

Single wall models may be installed with or without blower or rear grille. With dual wall models, as much as 75% of the heat may be directed into either room. All models may be installed with fresh air intake, it was pointed out.

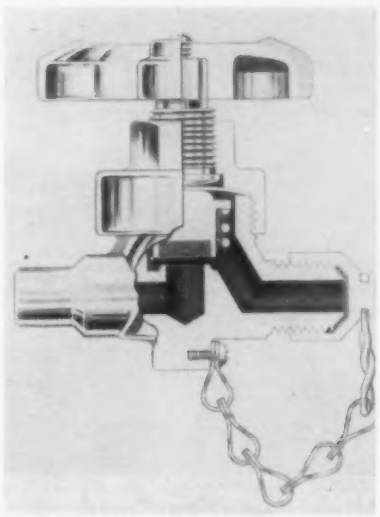
Major feature of the new design is a furnace-size combustion chamber with deep-drawn vertical corrugations to give greater heating surface and increase air flow. Combustion chambers are made of aluminized steel and are covered by a 20-year warranty.

New "Longlife" burners are cast iron with raised sawed slot ports, and are easily removed by releasing a single mounting pin.

All heaters are equipped with 100% safety shutoff. Automatic controls and "Tri-Matic" three-speed blowers are optional equipment. Finish is neutral tan "Hammerloid" baked enamel.



VENTED recessed wall heater (1) fits between standard 16-in. on center wall studs. Phantom view at right shows burner, corrugated combustion chamber and diffusion-type, three-speed automatic blower.



'Kerojet' Valve Features Forged Brass Body

——KEY NO. G-426——

PITTSBURGH—A new charge, purge, and drain valve, precision designed for refrigeration and air conditioning systems was recently announced by Kerotest Mfg. Co. It has a full open height of 2 1/4 in.

"Kerojet" is designed for ease of operation and features a forged brass body with an integral mounting flange, beryllium copper and stainless steel diaphragms for maximum resistance to wear, it was claimed.

Maximum operating pressure is 500 p.s.i. Maximum temperature is 200° F., and connection size of the unit is 3/8 in. o.d. inlet and 3/8 in. male flare outlet.

Charging Kit Wastes No Refrigerant

——KEY NO. G-427——

AURORA, Ill.—A new CM-500 "Multi-Can" charging kit for refrigerant dispensing was recently developed here by Madden Brass Products Co.

Claimed to provide quick and accurate field servicing, the kit can draw refrigerant from one can at a time or from three simultaneously wasting no refrigerant.

It consists of manifold, three universal type dispensing valves, and one "Duo-Test Quick Coupler" charging line, the company said.

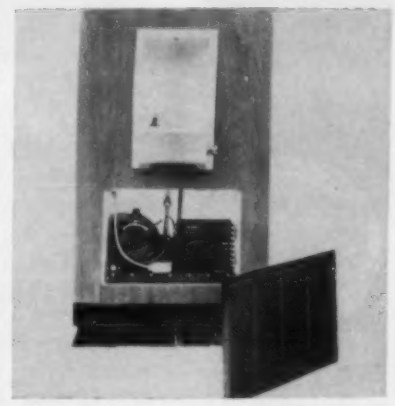
'In a Wall' Water Cooler Permits Remote Uses

——KEY NO. G-428——

COLUMBUS, Ohio—Ebco Mfg. Co. recently announced introduction of a new type "Oasis" water cooler called "In-A-Wall."

Remote applications of this unit include mounting to any basement's overhead joists. It is compact with both drain and adjustable thermostat located in front for accessibility.

Designed to provide "custom-tailored" water cooling, a grille covers the unit when installed in or behind a wall. In-A-Wall is available in two sizes in either stainless steel or with prime coat ready for painting. Model IW-5 supplies 5 g.p.h. and model IW-10, 10 g.p.h. Both carry a five-year warranty.



Aerovox Capacitors Have 'Weatherguard' Finish

——KEY NO. G-429——

NEW BEDFORD, Mass.—Aerovox Corp. recently announced that its full line of air conditioning capacitors is now available with the new "Weatherguard" case finish which protects them from corrosion regardless of climatic operating conditions.

In addition, cadmium-plated covers have eliminated harmful corrosion in the areas under bushings and at double-rolled seams, the firm claims. Now Aerovox

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

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What's New or Current Literature Available

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Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
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PRODUCTS
BEVERAGE COOLERS AND INSTANTANEOUS DRAFT BEER COOLERS.
(With Refrigerated Faucets)
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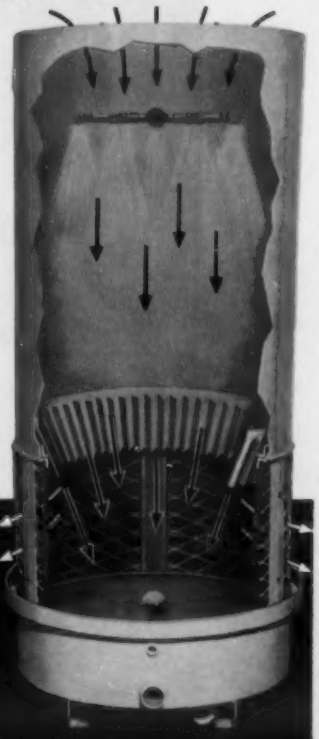
hit of the show
you saw it in action at the International Exposition

FORCED DRAFT!
NO FAN!

KOCH
JET forced draft
COOLING TOWER



nothing cools like water!
Here is the tower that permits you to take full advantange of the efficiency and dependability of water-cooled condensers.

lower cost!
no moving parts!
attractive—compact!

Sizes to match all self-contained air conditioners 3 to 25 tons

AMAZINGLY SIMPLE DESIGN!
SIMPLY AMAZING PERFORMANCE!

Inlet Diffuser / Inductor Nozzles / Powerful Jet Action Forces Air / 500 F P M Velocity / Assures Intimate Contact with Water / Self-Cleaning Dynamic Sprays / No wood Fill / 360° Glass Eliminator / Plasticlad Finish Top to Bottom /

a word about the manufacturer

Koch Engineering Company, as a basic oil industry equipment manufacturer for more than 30 years, is world famous for its developments in heat transfer refinery processes.
The same engineering skill that makes Koch outstanding in the oil industry has gone into the manufacture of the revolutionary Koch Jet Action Cooling Tower.

KOCH
ENGINEERING CO
321 West Douglas
Wichita, Kansas

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Magic Jet
YOU
WILL APPRECIATE THE TECHNICAL
SUPERIORITY OF PATENTED, EXCLUSIVE
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B1-V
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YOUR CUSTOMERS WILL APPRECIATE THE
• Higher carbonation • Peak capacity
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IT'S EASIER, MORE PROFITABLE TO SELL THE FINEST
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DISPENSER INC.
CANFIELD, OHIO
West Coast Plant: 16028 S. Marquardt Ave., P.O. Box 142, Norwalk, Calif
In Canada: General Equipment Corp., Ltd., Toronto, Ont.

High-Capacity Outdoor Coolers Developed

———KEY NO. G-4210———

DALLAS — Development of a complete line of high-capacity packaged air conditioning equipment for outdoor installation was announced by Alton Mfg. Co.

Made in 10, 15, 20, 25, and 30-ton sizes, the equipment has a special built-in evaporative condenser section and packages all component units into a self-contained skid-mounted unit.

A completely enclosed package of insulated galvanized panel construction makes the unit weatherproof. Special gloss paints provide color and additional protection, the firm pointed out.

Other protective measures include installation of stainless steel eaves over all panel openings and mounting of controls in a plexiglass control box.

Refrigerated Shelving Display Unit Offered

———KEY NO. G-4211———

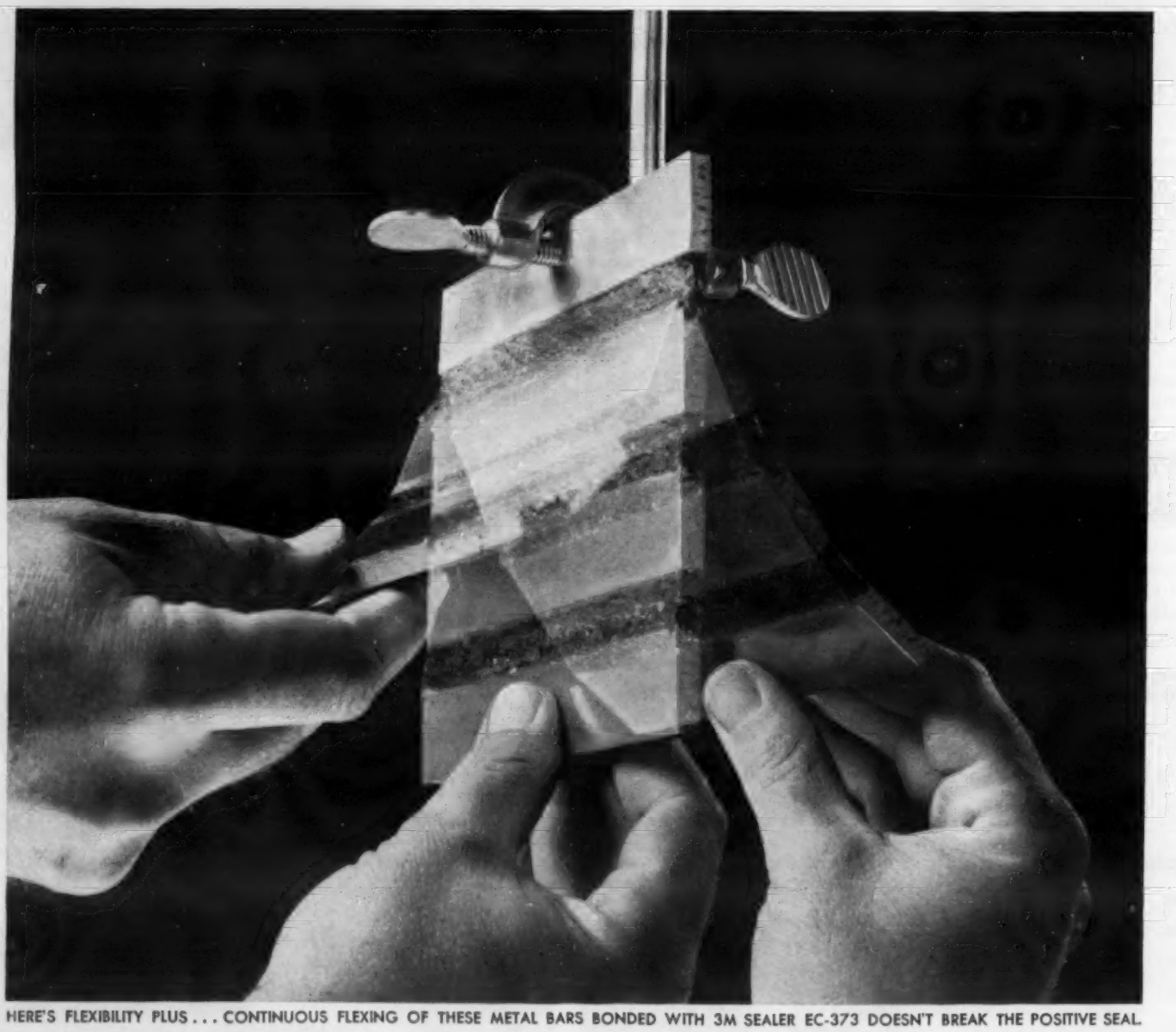
ST. LOUIS—A new type refrigerated shelving display unit 5-ft. long was recently introduced by Hussmann Refrigerator Co.

Called the "Five-Spot," the new case was designed for use as a spot merchandiser of perishables. It will display up to 713 lbs. of delicatessen items on its 23 sq. ft. of refrigerated shelving, the firm said.

Condensing unit is built-in so the merchandiser can be plugged in anywhere—at the end of a shelving run, in an aisle, against a wall, or near a checkout—if 5 ft. of space is available.

Fancy salami, ham salad, cold cuts, canned biscuits, pre-packaged produce from celery and carrots to such specialty items as fresh berries, table-ready and smoked meats, and the full dairy line can be merchandised.

Flexibility like this means
vibration-proof sealing . . . with EC-373



HERE'S FLEXIBILITY PLUS . . . CONTINUOUS FLEXING OF THESE METAL BARS BONDED WITH 3M SEALER EC-373 DOESN'T BREAK THE POSITIVE SEAL.

Top performance in air conditioners requires that moisture stay where it belongs . . . and durable, moisture-tight 3M Sealer EC-373 sees to that!

The lasting, flexible seal of EC-373 is unimpaired by vibration, high or low temperatures. Its positive adhesion to metal makes a seal vibration can't break . . . that won't become brittle in temperatures low as −25°F. . . . won't soften even at temperatures as high as +250°F.

When EC-373 seals inside compartments, water can't seep from one to another—or out onto the floor. It seals exterior cabinets so that moist air can't get inside. Freeze-ups are prevented. Insulation keeps dry. Apply EC-373 fast and easily by pressure gun, flow gun, hand caulking gun, brush or spatula.

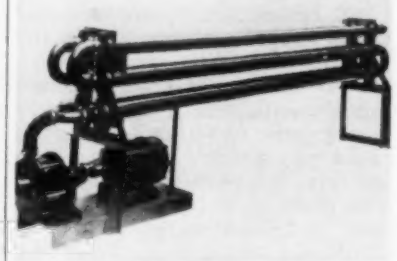
SEE WHAT 3M ADHESIVES CAN DO FOR YOU!

Consult 3M Research. Contact your 3M Field Engineer. Or for information and free literature, write on your company letterhead to: 3M, Dept. 134, 417 Piquette Ave., Detroit 2, Mich.

PRODUCT OF 3M COMPANY RESEARCH

MINNESOTA MINING AND MANUFACTURING COMPANY • ADHESIVES AND COATINGS DIVISION

417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • EXPORT: 99 PARK AVE., NEW YORK 16, N.Y. • CANADA: P.O. BOX 757, LONDON, ONT.



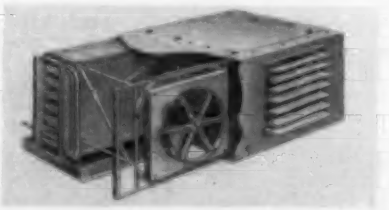
Exchangers Heat, Cool Larger Plating Tanks

———KEY NO. G-4212———

ESSEX FELLS, N. J.—To heat and cool new larger plating, anodizing, and pickling tanks, a new line of jacketed exchangers and proper capacity pumps on a single base has been announced by Carl Buck & Associates.

Exchangers utilize karbate, steel, stainless steel, titanium, or tantalum depending on corrosion characteristics of various solutions, the company stated. "Camac" pumps are made of furacam acid proof plastic, cast steel, or stainless steel to match the corrosion resistance of the exchangers, it was added.

Camac "Big Jobs" are available in capacities up to 3,200,000 B.t.u.h. in one unit and can be provided with built-in temperature controls for either heating or cooling.



Blast Freezer Air Units Introduced

———KEY NO. G-4213———

MAYWOOD, Ill. — Heavy-duty air units for blast freezers or holding freezers were recently introduced here by J. E. Watkins Co.

Standard sizes of 3 to 15 tons with air range of 6° F. and temperature difference of 13° between entering air and refrigerant are made, the firm said. Larger or non-standard units are made as desired.

A special feature is a hot-gas defrosting finned coil built-in so the coil provides additional evaporator surface when not being used for defrosting, it was pointed out.

Also offered is a coil and fan assembly separately where required for use in blast tunnel or false ceiling construction.

For more information about products advertised on this page use Information Center, page 31.

Rigid Climate Controls Hold Temperature, Humidity Within Set Levels In Air Conditioned Cigarette Making Plant

GREENSBORO, N. C. — Five years of satisfactory performance as an "inside weather control" in a P. Lorillard tobacco plant in Kentucky has prompted the use of a rigid cellular glass insulation material in the walls and roof of the hugh new 13-acre cigarette plant here, one of the most modern in the world.

The Greensboro plant with over 600,000 sq. ft. of floor space is almost completely air conditioned.

Because tobacco is extremely sensitive to temperature and moisture, 2-in. thick "Foamglas," a product of Pittsburgh Corning Corp., was installed in three roofs at Louisville in 1951. Two of the installations were on old wood deck roofs as part of a modernization program. The third was on the wood deck of a new building. Total area covered was 81,400 sq. ft., with built-up roofing applied over the insulating blocks.

'FOAMGLAS PREVENTS CONDENSATION, HEAT LOSS'

The Kentucky installation, according to M. S. Block, engineer in charge of Lorillard operations, solved the problem of condensation and excessive heat loss in highly humidified areas, prompting the use of Foamglas at the Greensboro plant.

To protect the quality of its "Old Gold" and "Kent" brands of cigarettes, the Lorillard company has established rigid controls on its indoor climate in certain areas of the Greensboro plant regardless of outdoor weather conditions.

Neither temperature nor humidity can vary plus or minus 2 from prescribed levels. The glass insulating material, because of its high insulating efficiency, eases the load demands on the plant's air conditioning system, it was stated.

HOLDS HUMIDITY AT 56% YEAR-ROUND

In the "making" room where the shredded, blended tobacco is wrapped in high quality paper, cut to size and packaged, the humidity is maintained year-round at 56%, with temperature kept at a constant 76° level. In the blending room where the various types of tobacco are carefully combined, humidity is held at 62%. In the winter the temperature is held at a 75° level.

In the cutting and drying rooms, a year-round humidity of 60% is maintained; temperature in the winter being held at 75°, and in the summer, 81°. In the bulking area, the relative humidity is 70; winter temperature 85°, and summer temperature 89°. In the cut storage room year-round humidity is 60%; winter temperature 75, summer temperature 81.

AIR CONDITIONED BY CHILLED WATER UNITS

These various climates are maintained by means of chilled water air conditioners; and 850-ton unit and a 350-ton fully automatic unit to meet varying load demands. The chilled water travels through underground and overhead mains to six penthouses where fans, filters, washers, pumps, and time-cycle controls are located.

The conditioned air is carried from the penthouses by insulated ductwork to various parts of the plant, spilling out through diffusers. Cool air comes from the chilled-water sprays. Warm air, where needed, comes from steam coils in the air washers. Roof ventilators in some processing areas supplement the evaporative cooling system where chilled water is not provided.

Exterior walls of the plant are core-type with 2-in. Foamglas installed between the outer course of brick and the glazed tile interior. A ¼-in. air space exists between the exterior brick and the Foamglas. The roof insulation is 3 in. thick over all tobacco handling areas reduced to 2 in. over corridors, offices, and storage areas.

The roof insulation was laid in hot asphalt and topped with a conventional four-ply built-up roof. This was covered with reflective marble chips to reflect the hot rays of the North Carolina sun. Roof decking is wood plank in all processing areas, with pre-cast reinforced concrete elsewhere.

"High compressive strength of the Foamglas, over seven tons per square foot, permits traffic for penthouse equipment maintenance and for roof inspection without damage to the insulation or deck," it was stated.

EASE of installation of "Foamglas" in the roof of the P. Lorillard Co. plant in Greensboro, N. C. is demonstrated here. Roofers are cutting the rigid cellular glass block with knives for fitting into the roof pattern.

THREE-IN. Foamglas in the roof of this "Making" room where "Old Gold" and "Kent" cigarettes are made, helps maintain a year-round temperature of 76° at constant relative humidity of 56%.

GENERAL ELECTRIC ZONE-BY-ZONE AIR CONDITIONING IS BIG BUSINESS!

BIG! Clifty Creek Plant, Madison, Ind., world's biggest investor-owned power plant installed General Electric Zone-by-Zone Air Conditioning.

BIG! Modern Louise Obici Memorial Hospital, Suffolk, Va., installed G-E Zone-by-Zone Air Conditioning.

BIG! 12-story Medical Arts Building, Oklahoma City, Okla., installed G-E Zone-by-Zone Air Conditioning.

General Electric makes it easy for contractors to land and handle the BIG jobs!

General Electric Air Conditioning Contractors bid on the *big* jobs—and land them! Thanks to General Electric's Zone-by-Zone method, contractors can offer installation without costly interruption to business—no major alterations to premises—no large initial outlay. And General Electric helps arrange liberal financing for your customers.

With the fabulous opportunities of Air Conditioning's Billion Dollar Decade ahead, General Electric comes through with the profit-building "Golden Gate" Plan. It gives General Electric Contractors tremendous advantages—industry's most famous trade-mark—most flexible selection of floor- and ceiling-mounted units, air- and water-cooled—comprehensive sales training course—famous 5-year warranty—Selected User Plan that pinpoints advertising, promotion and sales efforts to all prospects.

Get your share of Billion Dollar Decade profits through General Electric's "Golden Gate" Plan. See your General Electric Distributor or mail coupon. General Electric Company, Commercial and Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, N. J.

C. J. Rigby, General Electric Co.—Section A-5
Commercial & Industrial Air Conditioning Dept.
5 Lawrence Street, Bloomfield, N. J.

I am interested in a front row seat for THE BILLION DOLLAR DECADE.

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

In Canada, Canadian General Electric Co., Ltd., Montreal

Progress Is Our Most Important Product

GENERAL ELECTRIC

Selling for Profit—*(In Residential Air Conditioning)*

Answering the Objection That Cooling Is a 'Luxury'; Adopting the Right Attitude on Competitive Products

By Frank Klein

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. An engineering graduate of the University of Michigan, Klein became familiar through work done for the Armed Services during World War II with the medical aspects of properly controlled environments. Since then he has held executive sales positions with a number of air conditioning manufacturers. At present he is a partner in Heidenreich, Klein & Associates of Dallas, marketing specialist.

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the fourth article in the series which began in the March 18 issue.

There are thousands of prospects in the field of residential cooling sales who banish the thought of owning air conditioning plants in their homes because they feel it is a luxury—a luxury too costly to buy, too costly to own, and too costly to operate.

'LUXURY' DEFINED

Webster defines the word "luxury" as: "Anything which pleases the senses, and is also costly or difficult to obtain; an expensive rarity as silks and jewels are luxuries."

This most certainly is not a definition for residential cooling. Obviously, cool, clean, dehumidified atmospheres created by air conditioning equipment please the senses; it was designed to do just that. However, also just as obviously, such equipment is neither costly nor difficult to obtain in today's market.

What folks actually mean when they shrug off the possibility of owning residential cooling, and call it a "luxury," is that it is a desired possession but something they feel they cannot afford.

In previous instalments it has been established that air conditioning is certainly something that most people would like to have, and that through imaginative selling and intelligent sales promotion you can actually prove to a prospect that it is something he cannot afford to do without.

LEARN TO HANDLE OBJECTION

When the word "luxury" is thrown at you, it should arouse the same reaction as waving a red flag in front of a snorting bull. Recognize such resistance as one of the many objections you have to learn to handle.

Remember, objects of luxury represent the unobtainable to the common man. When you prove that a luxury is actually a necessity, you have taken it out of the luxury class.

Let's consider next the effect of competitive products on your own sales story.

While there are many ways in which competitive products can have an effect, or many effects, on your own sales story, if you have a competitive product such effects are measured by only two yardsticks: (1) how well you know your competitors' products, and (2) how well you know your own.

Charles B. Roth of Charles B. Roth & Associates, famous public relations counsellors, tells of a story that George Harrison Phelps, of advertising fame, used to tell, illustrating one of the typical ways a salesman can handle competition.

The prospect for a new automobile dropped into the showroom to see one. He warned the salesman who approached him that he had made up his mind not to buy the one the salesman showed him, but another make. His purpose in dropping by was to make a comparison between the two.

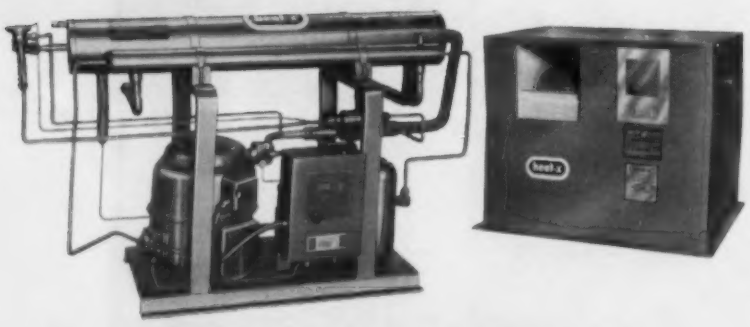
"That's perfectly all right," the salesman replied, "let me help you by telling you about our car and its features."

The salesman went into a rapid-fire but clear and decisive description of the features and plus points of his car.

As the salesman paused at the finish, the prospect said: "Your talk has not changed my decision entirely, although I see that your car does have certain advantages I like. Frankly I'd like to see the other car again before I make up my mind."

It was right here where our salesman showed he was not only on the ball but pitching it, for he said quickly, "Fine, if you will step outside into my car, I'll take you over to the other dealer's. His car is a good one and deserves your study and comparison. Then, if after comparing it point for point with

(Continued on next page)



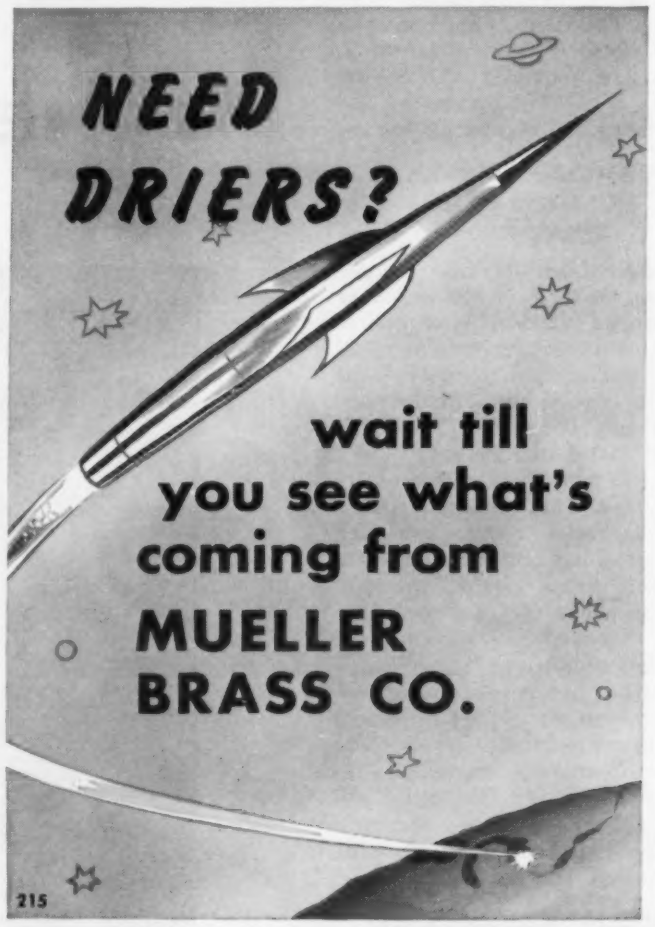
Assure YOUR Profit Share with these NEW heat-x Units

Completely packaged water chillers . . . in 2, 3 and 5 HP models . . . designed for easy, speedy installation that *builds profits.* Available in water-cooled models ('RPC') and air-cooled models ('ARPC'), these new Heat-X units were developed *specifically* for residential and light commercial air conditioning systems.

High efficiency patented Inner-Fin® construction of chillers, superheaters and condensers makes these the most compact units on the market. All water passages are of non-ferrous construction, eliminating corrosion problems.

Don't be left behind in the coming residential air conditioning boom. Write today for complete data on 'RPC' and 'ARPC' units.

HEAT-X, Inc.
A Subsidiary of Dunham-Bush, Inc.
BREWSTER • NEW YORK



STEPLESS STARTING for COMPRESSOR MOTORS

Velvet smooth starting of squirrel cage motors—obtainable only with Allen-Bradley compression resistance starters—eliminates excessive strains on gears, belts, pulleys, as well as on the driven unit . . . thus assuring increased equipment life. There is no heavy current inrush to cause flickering lights nor undesirable voltage fluctuations—so objectionable to power companies.

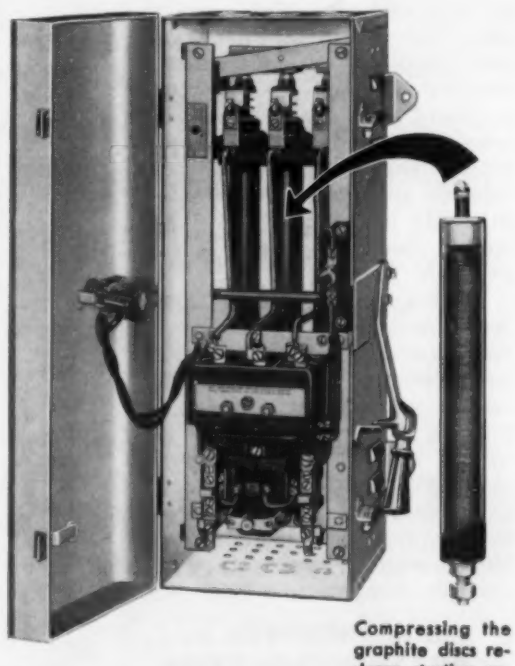
The Bulletin 640 is easy to operate . . . as the starting lever is gradually raised, the motor gradually comes up to speed. At full speed, line voltage is automatically applied without circuit interruption.

Write for your A-B Handy Catalog . . . the directory of manual and automatic "Quality" motor controls.

Allen-Bradley Co.
1313 S. First St., Milwaukee 4, Wis.
In Canada—
Allen-Bradley Canada Ltd., Galt, Ont.

Bulletin 837 temperature control

Bulletin 836 pressure switch



Compressing the graphite discs reduces starting resistance steplessly.

Bulletin 640 Manual Resistance Starters provide no-voltage protection. Dependable overload relays retain accuracy even after years of service. The motor is stopped by pressing the STOP button in the cover of the starter. Available from 5 hp to 200 hp, 220-440-550 v.

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL
QUALITY

The Sign of QUALITY MOTOR CONTROL

For more information about products advertised on this page use Information Center, page 31.

Selling Residential Cooling--

(Continued from preceding page)

our car, you decide ours is the better one, we'll be happy to sell you."

The salesman drove his prospect over to the competitive dealer, introduced him, left him, and returned to his own showroom. Later the prospect came back to him and said: "Your willingness to let me see the other car, your admission that it was a good car, and your offer to take me to a competitor's place of business and introduce him, astonished me. I just don't believe anyone could do things like that unless he had absolute confidence in what he was selling, which in this instance is your car.

'YOUR CONFIDENCE MADE ME BUY'

"You evidently have no fear of competition. Your own confidence has made me believe in your car, and I have decided to buy it."

I think this is a typical illustration of a salesman (1) knowing his competitor's product so well that he could judge its effect on his own sales story, and (2) knowing his own product so well he could combat the effect of the competitive product.

Sales engineering—for that really is the basic foundation of sales in mechanical goods—demands not only an understanding and use of the basic principles of sales philosophy, but an understanding and use of the knowledge of the product.

LEARN TO KNOW YOUR PRODUCT

You have to know your own product before you can ever assess the effect that a competitor's product can have on your own sales story. It takes a mighty and consistent application of the-seat-of-the-pants to the-seat-of-the-chair and much midnight oil to do this.

All of us have heard of the necessity for "Confidence"—in oneself and in one's product; both stem from an inherent knowledge of oneself and one's product. Without this inherent knowledge, the effect of competitive products on your own sales story can be devastating.

If you would be successful in the face of competition, do two fundamental things: (1) be confident in your equality to any other human, and (2) attempt only to sell a product in which you have confidence and a true knowledge of its competitive position in its field of sales.

Don't attempt to sell a product simply because it happens to be offered for sale in the residential cooling market.

'SELL FEATURES TO YOURSELF FIRST'

Look at it, tear it apart, pry, learn, experience, test its effect on the consumer in comparison to competition, view from upside down to inside out, sell its features to yourself.

Then sit back and view it objectively and decide if you can live with it—and on it.

Progressive manufacturers in the residential cooling market today realize that they are involved with a product which must be imaginatively sold, and that it must be intelligently promoted to appeal to the individual—facts which are fundamental in any consumer goods product.

Residential cooling equipment IS a consumer goods product. It no longer is the mystifying, engineered hybrid of the drawing board and halo torch.

Does the housewife look at her refrigerator and think of the refrigerant, the compressor, the controls and their multiple effect? Does she look at her warm air furnace and think of the heat exchanger, the blower, the thermostat, the ductwork?

'THINK OF COOLING IN TERMS OF EFFECT'

Certainly not. She and her homeowner husband think of these things exactly as they do their utilities—in terms of effect. Then why should they think of their air conditioning equipment in any other terms?

This factor of effect is translated by the feature aspect which we noted earlier, and it is this feature aspect which has a direct bearing on how competition and competitive products affect your own sales story. Your product has to be competitive in the feature aspect, you have to know every possible detail about this aspect, and then you have to "tell 'em to sell 'em."

REQUISITES

If I were to draft a set of rules for evaluating a product or line of products to sell in competition in the residential cooling field, I think they would look something like this:

Prime requisites:

A. Reputation of the manufacturer.
B. Quality of manufacture.
C. Reliability of product.

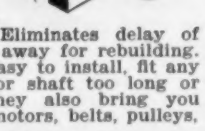
Secondary requisites:

A. Competitive feature aspects.
B. What is its cost?
C. Can I sell it at a profit?
D. Does the value justify both cost of the product and selling price?
E. Can I live with the product?
F. Can I trust my own and my company's reputation with it?

I think these are the things with which I would build my yardstick of appraisal. Individually and collectively they have a direct bearing on the effect of competitive products on any sales story I might construct.

(To Be Continued. Next instalment: "How residential cooling products may be best presented to the prospect and how to simplify the story of installation.")

MOTOR BASE ADAPTERS
Sell Many Other Items



Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

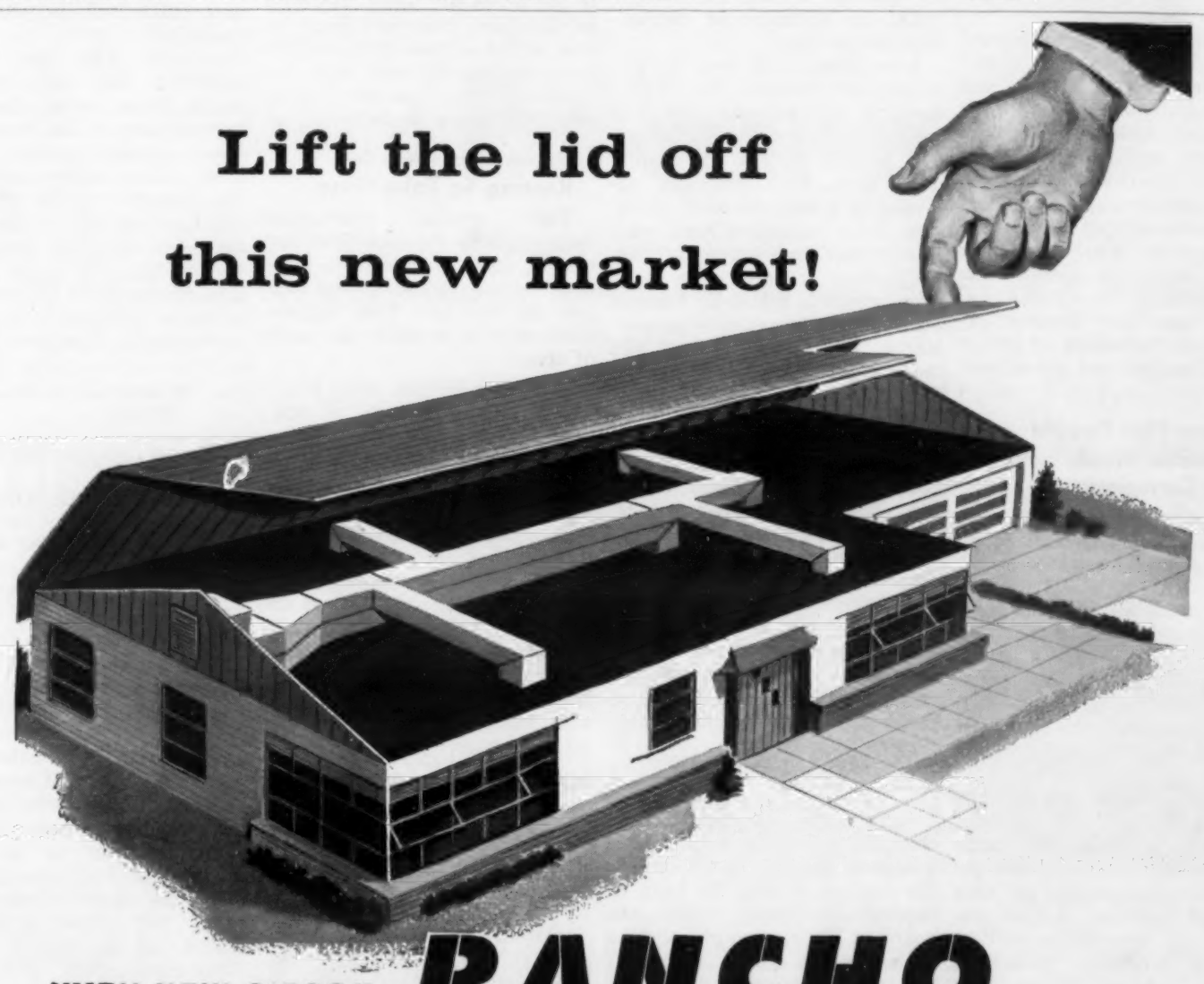
SIZES FOR ⅙ to 3 H.P. Inclusive

Engineering Research Associates, Inc.
3475 East Nine-Mile Road
Hazel Park, Michigan

Looking for a Business to Buy . . . ?

Check the Business Opportunities Section in the classified advertising columns.

Lift the lid off this new market!



***WITH NEW GIBSON* RANCHO**

Air-cooled "PACKAGED" Air Conditioners

A great new market opens wide this year – central air conditioning for even modest homes *without* existing ductwork–and Gibson makes it easier for you to get your share.

Gibson Rancho units are lightweight, compact and easy to install. "Packaged" installation includes 2 or 3 ton Gibson Rancho unit, pre-fab fiberglass ductwork, louvres, grilles, diffusers, thermostat.

Temperature Experts for 80 Years

RESIDENTIAL AIR CONDITIONING
2-3-5 ton units • Air- and water-cooled • New Rancho units with pre-fab ductwork • Remote air-cooled units 2 to 10 tons • Packaged water-cooled units

COMMERCIAL AIR CONDITIONING
Packaged units 2 to 40 tons

DOMESTIC HEATING
Gas- and oil-fired units • Exclusive EVEN-FLO Vari-flame • Complete line Hi- and Lo-Boys

INDUSTRIAL AIR CONDITIONING
Packaged direct expansion systems to 40 tons • Packaged chillers • Water-to-air, air-to-air heat pumps

GIBSON RANCHO GOES ANYWHERE!

SALES-MAKING FEATURES

- Exclusive new Turb-O-Tube heat exchanger increases cooling speed and capacity—saves electricity.
- Cools and dehumidifies. • No water, no plumbing, no costly wiring.
- 5-Year Guarantee. • Low cost—*less* than two window units.
- Qualifies for easy Title I FHA financing.

Call your Gibson distributor or write direct to Gibson.

Gibson® DIVISION OF HUPP CORPORATION

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CORROSION

Part 1—Chemical Corrosion

The experienced refrigeration and air conditioning serviceman is familiar with the fundamental principles of several trades and professions. Familiarity with the basic principles of corrosion chemistry can serve as an added valuable tool in his work.

This series of articles by Frank J. Versagi, chief chemist, Mueller Brass Co., will also delve into the causes and effects of corrosion in refrigeration and air conditioning systems. Part I of the series is concerned with chemical corrosion.

By Frank J. Versagi, Chief Chemist, Mueller Brass Co., Port Huron, Mich.

It would be difficult to find a refrigeration serviceman who has had no experience with corrosion. Corrosion, which costs industry millions of dollars each year, is directly or indirectly the cause of many refrigeration and air conditioning service calls. Electrical and mechanical failures are often the result of the corrosion of other components in the system.

An electrical overload caused by high head pressure? Could be caused by corroded and clogged condenser tubes.

A seized bearing? Possibly the result of copper plating caused by internal corrosion.

An aluminum-copper connection failure—almost always on the aluminum side? Could be galvanic action—a special case of corrosion.

Then there are obvious examples like the attack of brines on metal piping and galvanized pans.

Experience Has Taught Servicemen Much About Corrosion

An experienced serviceman, of course, is part electrical engineer, mechanical engineer, and plumber. And it would help if he could be a bit of a chemist, for many of his troubles can be traced to a chemical origin—either inside or outside the system. Unfortunately, most servicemen learn about the corrosion the hard way, through experience.

And it will be by tying in the actual experience of servicemen that we will teach the basic principles of corrosion and refrigeration chemistry in this series of articles. Actual examples and experiences will be used to illustrate principles wherever possible. Where it is not possible, we will demonstrate our principles with straightforward experiments which can be performed by the reader with simple equipment and readily available materials.

Corrosion Defined

For our purposes, corrosion can be defined as the complete or partial destruction of a metal by chemical or electrochemical action.

More loosely, it may be extended to include the breakdown of refrigerants, oils, and water—the products of which will in turn attack the metals in a unit. Also generally included in a discussion of corrosion is the buildup of hard scale in condenser tubes and the like.

Chemical corrosion is that type where a metal is directly attacked by some active substance. The rusting of iron and the attack on copper by strong fluxes are examples of simple chemical corrosion.

Electrochemical corrosion involves both the passage of electrical current and chemical action. The current need not be applied from some external source—as from a grounding wire. Although this is one type of electrochemical corrosion, a more common type — slightly more complex — requires the presence of several combinations of metals, gases, and liquids to cause current to flow and corrosion to take place.

Rusting of Iron

Let's begin our discussion of chemical corrosion with a phenomenom familiar to all of us—the rusting of iron. We have all encountered rusty crankcases, bearings, fittings, ruptured iron filter screens. As a chemist I have opened very few filter-drier units which did not contain appreciable amounts of rust.

It is common to believe that water is the cause of rust. This is not quite true. It is possible to expose iron to water and never encounter rust. Try this experiment.

Place an iron nail, or preferably some steel wool into each of three glasses. Place the first glass under the cold water tap and vigorously run in the water filling the glass and letting it run over for a minute or so.

Cover the iron in the second glass with water which has recently been boiled, then cooled to room temperature. Put some sort of lid on the glass.

Cover only half of the iron in the third glass with the recently boiled water. Leave this glass uncovered.

In a short while, usually within hours, the iron in the first glass will have rusted. The iron in the second glass will remain rust-free for days—indefinitely if the lid is air tight. The iron in the third glass will begin to rust at the surface of the water; that portion of iron near the bottom of the glass will remain clean for hours or days.

Oxygen Necessary for Rusting To Take Place

This simple experiment demonstrates the fact that rust cannot form without the presence of air—actually the oxygen in the air. This follows, since rust is actually the oxide of iron.

Iron plus Oxygen gives Iron Oxide (in presence of moisture)

$$4Fe + 3O_2 \rightarrow 2Fe_2O_3$$

When the cold water is vigorously poured over the iron, it traps thousands of air bubbles which supply the oxygen for the above reaction. Boiling the water drives out most of the air, and oxidation or rusting is retarded or prevented. Where the boiled water only partially covers the iron, the metal begins to rust at the surface of the water, because it is at the surface that air is first absorbed by the water.

Moisture Alone Does Not Cause Rust

The rusting or oxidation of iron, therefore, is chemical attack or corrosion due to oxygen or air *in the presence of water*. The water does not *cause* the rust.

The practical significance of this fact is that when rust is found in a system (assuming the unit was thoroughly clean upon installation), there must be both moisture and air in the system. Moisture alone cannot cause rust. Air alone, under the conditions present in a refrigeration unit, cannot form red rust.

Rusting Indicates Low-Side Leak

Actually, of course, a low-side leak will pull in the surrounding atmosphere which will normally contain both air and moisture. Finding an appreciable amount of rust in any part of a system, therefore, is an almost certain sign that there is a low-side leak.

These facts also explain why the outside of a steel or cast iron compressor will remain clean indefinitely in some atmospheres, but rust badly in others. If a compressor were submitted to a humid atmosphere of a gas like nitrogen, it would never rust.

Anyone who has used a soldering flux, especially the liquid fluxes which require no pre-cleaning of the metals, will recall seeing copper discolor from yellow to green where the flux was not wiped off. In another article we will discuss the make-up and function of the various types of fluxes. For now this discoloration of copper will serve as an example of chemical corrosion by an active chemical.

Almost always the chemical involved is an acid or an acid salt. (An acid salt is a chemical substance, usually a powder, which when dissolved or melted tends to act like an acid.)

In the most simple type of chemical attack, the metal is actually dissolved in the chemical very much like sugar dissolves in coffee. That is the solid becomes part of the liquid. Drop a piece of zinc or aluminum into some hydrochloric acid (muriatic acid). If enough acid is present, the metal will completely disappear—in the meantime evolving or giving off bubbles of hydrogen gas.

If the liquid is evaporated a solid will crystallize as the volume of the liquid is lowered. This solid powder is the chemical salt of the metal. For example,

Zinc plus Hydrochloric Acid gives Zinc Chloride plus Hydrogen

$$Zn + 2HCl \rightarrow ZnCl_2 + H_2$$

When soldering or in an operating unit, of course, there is never enough acid present to completely dissolve any particular piece of metal. (We'll discuss later on just how the acid forms in a unit.)

Salts Vary In Color

But whenever a small amount of acid does come into contact with metal, a small portion of the metal dissolves. Since there is usually not enough liquid to dissolve the chemical salt formed, a powder forms almost on the spot of the attack. Aluminum salts are normally white, iron salts yellow, and copper salts green. None of these salts will dissolve in "Freon" type refrigerants.

Generally speaking, the flux stains around soldered joints, although unsightly, do no further harm. The reason for this is that almost always the flux is completely used up in forming the corrosion products, and the products merely remain on the copper, actually serving as a protective layer for the metal beneath. This is similar to the action of the familiar green patina seen on copper roofs.

It is possible for active flux to be trapped in a joint and proceed to corrode the metal slowly over a period of months. On occasion, such corrosion has been sufficient to cause failures under high pressures.

Situation Different Inside Unit

Inside a unit, the situation is quite different. Any powder formed is subjected to the stop-and-go flow of the refrigerant. This action tends to remove mechanically the corrosion products and carry them along the stream until a restriction is reached where the solid matter can find a foothold.

Such places, unfortunately, are at orifices, fittings, or filtering elements. The results of restricted refrigerant flow do not need further discussion for the readers of AIR CONDITIONING & REFRIGERATION NEWS.

If direct chemical attack occurs on machined surfaces, the problem is even more serious, since the result will be the marring and pitting of the surface, with subsequent detrimental effect on close tolerance operations.

Copper Plating

A well known effect of chemical corrosion within a system is copper plating—the phenomenon of copper being somehow transferred from tubing to a machined, close tolerance surface.

Although the mechanics of copper plating are not completely understood, in the final analysis, it is basically a chemical transfer. The copper is dissolved by active chemicals in the system. Very small amounts of copper — in liquid form — travel highly polished steel or aluminum, the copper is forced out of solution by a process known as displacement.
throughout the unit. When the copper bearing liquid reaches

Phenomenon of Displacement

The phenomenon of displacement can be very easily demonstrated.

Dissolve a small piece of copper tube or wire in equal parts of hydrochloric acid and hydrogen peroxide. (Your wife's peroxide will do, but you'll get faster results with a 30% solution you can get from your druggist.) The reaction is vigorous, so use a deep glass and keep away from the spray until the copper has dissolved. The solution will turn blue.

Pour part of this solution into a second glass and add half again as much water. Dump in a piece of steel wool or an iron nail or wire. In a few minutes, the iron will be coated with copper—copper which was dissolved off the piece in the first glass.

Essentially, something like this happens during copper plating in a refrigeration unit. The copper is dissolved at one loca-

(Continued on next page)

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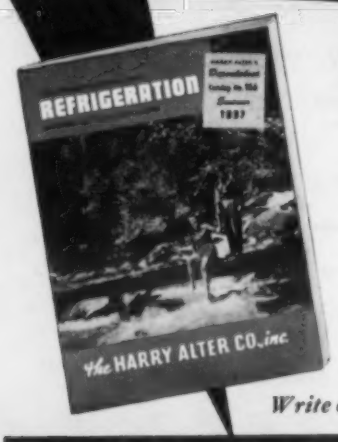

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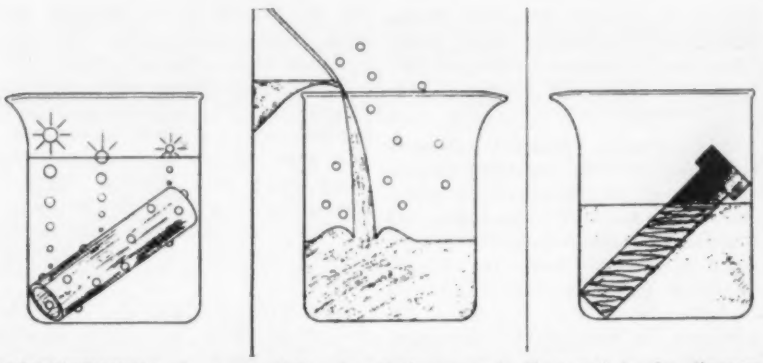
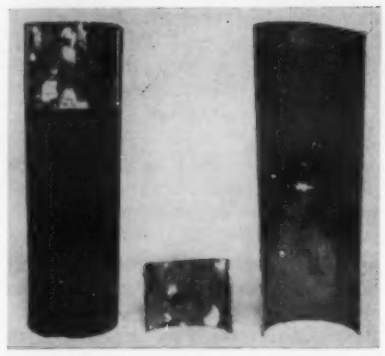
For more information about products advertised on this page use Information Center, page 31.



DEMONSTRATION of copper plating by displacement is illustrated in the diagram above. Steps in the demonstration: 1. Dissolve copper in acid; 2. Pour blue solution into second container and add water; 3. Place iron in second container. Copper will plate iron by displacement from solution.



SAMPLE of tube subjected to extremely aggressive chemical attack in laboratory.

Table 1—Activity Series or Electromotive Series of Metals

Lithium	A metal can displace any metal beneath it in the series. The farther apart the metals, the more active the displacement. Examples: Magnesium can displace iron from solution; iron can displace copper.
Calcium	
Sodium	
Magnesium	
Aluminum	
Zinc	
Iron	
Tin	
Lead	
HYDROGEN	
Copper	
Mercury	
Silver	
Gold	

Chemical Corrosion--

(Continued from preceding page)

tion, carried by the refrigerant-oil mixture to another location, where the copper is displaced from the solution and plated.

It has been asked why copper plates on aluminum, cast iron, and steel, but never the other way around; none of these metals ever plate on copper. Without getting too involved, here is the explanation.

Metals Vary In Chemical Activity

Chemists have found that the various metals differ in their chemical activities. Magnesium, for example, is an extremely active metal. Gold and silver are examples of extremely inactive metals.

The less active metals are also called noble metals. Based on their findings, chemists have listed the common metals in the order of their activity. This list is called the "activity series" or "electromotive series." We will meet a similar series in our next article when discussing electrochemical corrosion.

The most active metals are placed at the top of the list; the least active at the bottom. See Table I. Notice that aluminum, zinc, and iron are near the top of the series—the more active metals. Notice further that copper is very close to the noble metals, silver and gold.

Hydrogen Is Dividing Line

The gas, hydrogen, is the dividing line. Metals like iron, zinc, and aluminum will displace hydrogen gas from hydrochloric acid—as in our experiment above. Metals below hydrogen in the series will not displace this gas from hydrocloric acid.

This can easily be demonstrated by dropping pieces of the several common metals into hydrochloric acid. Copper will be the only metal commonly used in refrigeration which will not dissolve and give off hydrogen. (You will recall we needed the help of peroxide to get the copper into solution for our copper plating experiment.)

Now, any metal in the series can displace from solution any other metal *beneath* it in the series. A piece of zinc dropped into a solution of silver nitrate will become coated with silver. The zinc displaces the silver from the solution; the zinc in turn dissolving and going into solution.

Copper Low on List

Aluminum, zinc, iron, steel, are all above copper in the activity series. Therefore, when a liquid containing copper in solution comes into contact with a steel bearing, for example, the iron in the steel displaces the copper from the solution—causing the copper to plate on the bearing. It is impossible for the reverse action ever to take place.

In non-refrigerating applications, it is possible to take fairly standard preventive measures against corrosion. To prevent rust in your automobile radiator, for example, you add rust inhibitors, chemicals which tend to protect the surface of any iron parts and which tend to remove air from the water.

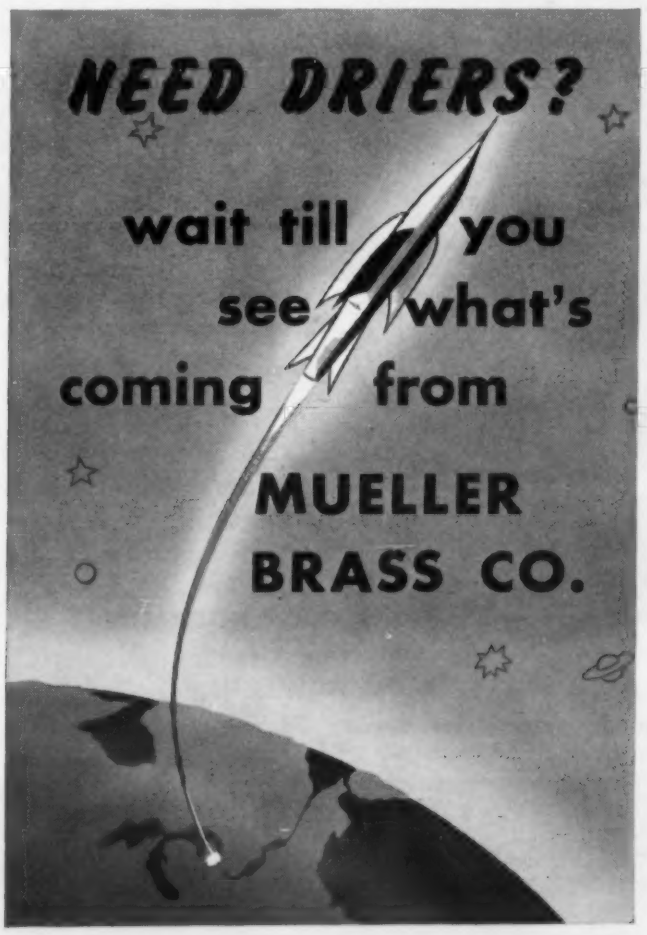
In refrigeration we dare not add any foreign substances to the refrigerant-oil mixture.

The refrigeration serviceman must rely upon his knowledge and experience and periodic inspection and maintenance to inform him when active chemical corrosion is taking place in the units he is servicing. With the help of the information being presented in these articles, he will be able to more intelligently take on problems of a chemical nature.

Our next article will deal with electrochemical corrosion. It is now possible to have in one unit such diverse metals as cast iron, copper, steel, aluminum, even stainless steel.

What is the possibility of failure when two or more such metals are joined together? How can electric current flow in a system where no current is being applied?

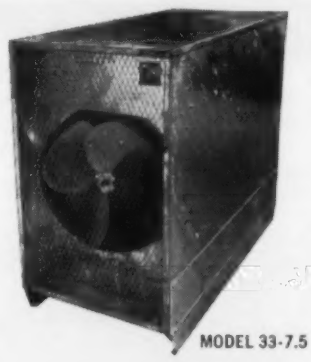
(To Be Continued)



Havens

COMPLETE LINE OF PERFORMANCE PROVED COOLING TOWERS FOR EVERY TYPE INSTALLATION

HOT DIPPED GALVANIZED After Fabrication



MODEL 33-7.5

RESIDENTIAL and SMALL COMMERCIAL INSTALLATIONS 3-15 TON

Small and compact, this tower has pan cover, expanded metal inlet screen and expanded metal fan screen. The motor and fan are recessed and hot water enters rear of distribution pan. Slow speed fans insure quiet operation. Easily disassembled if necessary.

MODEL 33-40

LARGE COMMERCIAL AND INDUSTRIAL INSTALLATIONS 20-60 TON

Constructed for easy disassembly, this tower has as standard features a fan screen, belt guard and weather-protected motors. Accessory items at a slight extra cost include a pan cover, expanded metal inlet screen and motor cover.

80-150 TON

HEAVY DUTY INDUSTRIAL INSTALLATION HAVENS VERTI FLOW 80-150 TON

As modern as today's architecture, the low, sleek lines of the Havens Verti Flow Towers blend with building outlines. Fans are all aluminum – variable pitch—and sheaves are corrosion resistant cast iron. Shipped assembled. Also available—175 and 200 ton Verti Flow models—shipped in 3 sections.

OUTSTANDING PERFORMANCE
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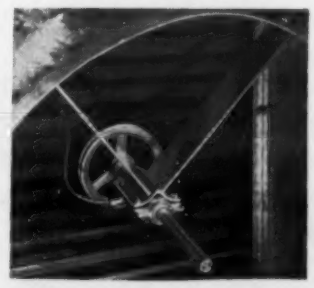
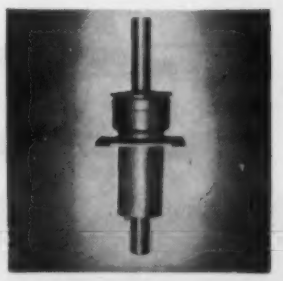


33 SERIES BEARING

Porous bronze bearings in zinc-plated cast iron housing. Stainless steel fan shaft. Extra large oil cup.



VERTI FLOW BEARING

Bearing assembly is supported by heavy structural members. All parts are corrosion resistant.

Write for FREE brochures on Havens Series 33 Cooling Towers and Havens Verti Flow Cooling Towers

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Men on the Move . . .

Perfection Industries, Div. of Hupp Corp.—EDGAR E. DONALDSON has been appointed appliance sales manager. He was previously engaged in establishing wholesale outlets in Florida as district manager.

White-Rodgers Co. — GERRY POWELL, manager of the firm's Chicago office, has been appointed assistant sales manager with headquarters in St. Louis. He will supervise regional sales offices on a direct field contact basis.

Air Conditioning Div., General Electric Co.—L. H. DRAYTON has been named advertising and sales promotion manager of the Weathertron Dept. He previously was supervisor of advertising in that department.

Frick Co.—J. H. Carter has been named branch manager in St. Louis.

Heating & Air Conditioning Div., Century Engineering Corp.—F. G. JOHNSON has been named sales manager. Since 1952 he has been manager of boiler sales and assistant sales manager for Bastian-Morley Co., Inc., LaPorte, Ind.

Servel, Inc. — WILLIAM W. WALLACE, general manager of the International Div., has been elected a vice president of the company. He will continue in charge of the International Div.

Tuthill Pump Co.—M. J. McCAUGHEY has been appointed regional sales manager in charge of the sales organization in Wisconsin, northern Illinois, southern Iowa, Minnesota, and eastern Missouri.

Mueller Brass Co. — JOHN A. BERKA has been named sales representative in the Newark, N. J. office. He has been working in production planning and sales work at the main office.

JOHN R. MONTROSE has been appointed sales representative in the San Francisco office. He has been in the main plant sales department.

JOHN M. POWELL was appointed sales representative in the Cincinnati office. Powell, until recently, has been with the company's San Francisco office.

Reynolds Metals Co.—JOHN H. BOYLE has been promoted to manager of the appliance and equipment market. He formerly was director of radio and television advertising.

Trane Co.—ROY J. REEVES has been assigned as a sales representative in the Washington, D. C. field office. He has been a sales engineer for an air conditioning firm, and manager, wholesale division, of a heating organization.

A. J. MORITZ has been assigned as sales representative in the Gainesville, Fla. office. He has served as general manager and merchandising manager of two major firms.

McQuay, Inc. — DUANE R. WALLIN, formerly assistant manager of the OEM coil department, has been promoted to department manager.

He will be assisted by ROBERT I. JOHNSON, promoted to sales after five years of laboratory and engineering experience in OEM coils.

Whirlpool-Seeger Corp.—Promotion of PAUL LaROCHE to Cleveland regional sales manager for "RCA Whirlpool" and "Estate" home appliances was announced. He was previously district manager, laundry, for the district including Baltimore, Washington, D. C., and Harrisburg, Pa. in the New York region.

Crane Co. — FRANK E. DAMERON has been appointed assistant directing engineer of the heating and air conditioning engineering department. Since 1952 he has been a supervising engineer in heating engineering.

Hajoca Corp.—This east coast air conditioning and refrigeration equipment distributor announced several personnel changes, including retirement of JOHN T. BROWN, JR., vice president-treasurer.

STEPHEN F. KRATZINGER has been named treasurer; MARSHALL E. VOGEL, secretary; and C. A. MALARKEY, advertising manager.

E. J. TOLSON has been named Baltimore branch manager; P. B. MAYO, JR. transfers from Danville, Va. to Roanoke as manager; and L. H. DURHAM becomes Danville manager.

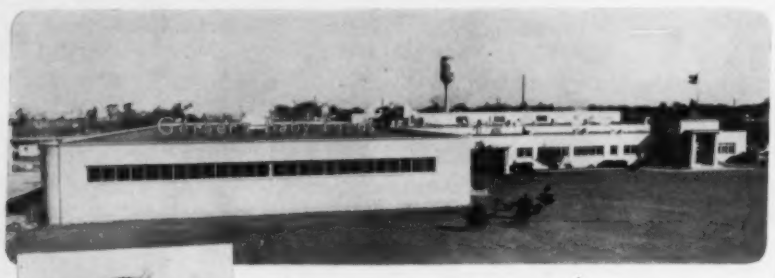
Westinghouse Electric Corp.—H. C. McDANIEL has been named director of technical information. He was formerly manager of technical information and will continue to supervise activities of both technical publicity and the Westinghouse "Engineer" magazine. In addition, he will provide technical assistance to the vice president of information services and handle various special projects.

ROBERT V. McGAHEY has been appointed manager of technical publicity for the company. He has handled various assignments in the department.

Heater & Tank Div., John Wood Co.—PATRICK N. MORGAN has been named assistant to the vice president and general sales manager. His immediate duties will be concerned with organizational and administrative matters in conjunction with the division's expanding sales force and broader product lines. He was formerly manager of sales for heating and air conditioning products with Combustion Engineering, Inc.

Iron Fireman Mfg. Co.—RALPH W. FREEMAN has been named plant manager for plants 1 and 2 in Cleveland. He has been production manager for the plants.

Fulton Sylphon Div., Robertshaw-Fulton Controls Co.—A. W. ROAT was appointed applications engineer, controls sales section. He previously served on the sales staff of the Fielden Instrument Div.



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Made at Rochester with
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These famous foods, described in the October Reader's Digest, are revolutionizing the feeding of youngsters.

We are proud to have furnished the cooling system for Gerber's new plant, where 500,000 jars of strained foods are packed daily. Installation (full-automatic) by Mollenberg-Betz Machine Co., Frick Distributors at Buffalo.

Specify Frick refrigeration, air conditioning, ice making or quick freezing for that important cooling system of yours. Literature and estimates on request: write today to

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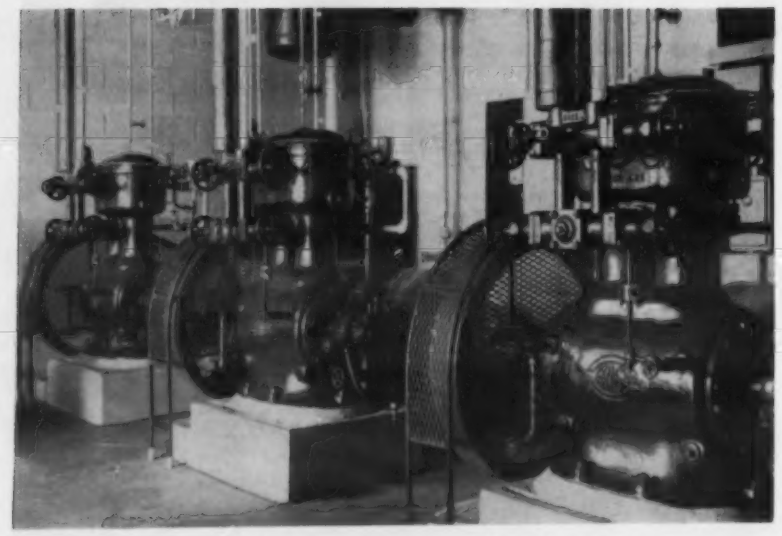


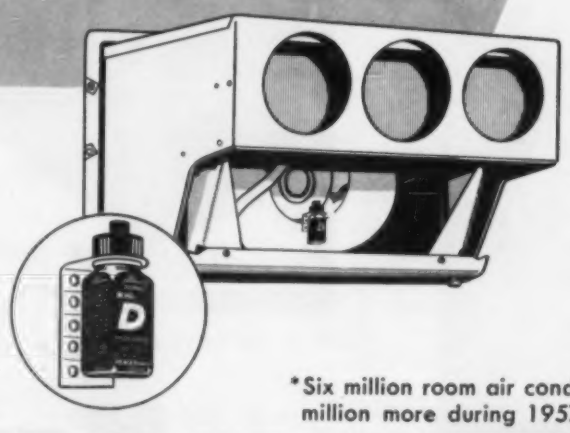
Three Of Six Frick Ammonia Compressors At Gerber's

HERE IT IS!

A "*Modern-Living*" "*Do-It-Yourself*" Kit with 8 MILLION Prospective Customers!*

BIG D
ODOR NEUTRALIZER KIT

FOR REFRIGERATED ROOM AIR CONDITIONERS



—"*ODOR-FILTERS*" the Air *As It Is Cooled!*

. . . And You'll Sell
BIG D ODOR NEUTRALIZER
Replacement Bottles
FROM NOW ON!

*Six million room air conditioners already sold; two million more during 1957 alone!

Write NOW for Complete DISTRIBUTOR-DEALER Information on This Profit-Plus Product!

LE FEVRE CHEMICAL COMPANY
1639 West Main • Oklahoma City, Okla.

For more information about products advertised on this page use Information Center, page 31.

Local Operators Can Discuss Problems at Frozen Food Group Membership Meetings

ELIZABETHTOWN, Pa. — A program of state meetings in states where local associations do not now exist—or are inactive—has been launched by the National Institute of Locker and Freezer Provisioners.

Meetings will be open to all locker plant, frozen food center, freezer food supplier, and food plan operators in the various states involved, it was explained.

Purpose of the conclaves is to give operators a firsthand account of latest industry trends and developments at national level, afford operators an opportunity to discuss their problems with a group that shares their interests, and investigate the possibility of organizing state associations in areas where none now exist, the institute pointed out.

State meetings will be conducted by Robert Madeira, executive director, and Jack Schwartz, information director. Already held are meetings at the University of Kentucky at Lexington, April 2; Maxwell House hotel in Nashville, Tenn., April 3; Marion hotel in Little Rock, Ark., April 5; and Bentley hotel in Alexandria, La., April 7.

Similar meetings for unorganized western states are being planned for early summer.

NILFP also reported that although its new plan of affiliation was introduced only two months ago, seven state associations have voted to accept it and have forwarded affiliation fees to institute headquarters. In addition, many officers and directors of other state groups have expressed approval of the plan "but have indicated that official action must be deferred" until spring meetings of their groups.

In addition, the institute noted that its eastern regional convention, to be held in New York City at the Hotel New Yorker May 19-21, "promises a fine program of hard-hitting information and ideas, and superb entertainment."

The committee for the 1957 national convention due in Minneapolis this September was recently appointed by Dan Lawrence, president of NILFP. Those named as planners are: James Lauck, operator of Lauck Provision Co., Little Rock, Ark.; former institute president, M. J. Nehring, now secretary of the Minnesota association and operator of Nehring's Locker Plant, Paynesville, Minn.; Owen Neiter, operator of Northside Locker Plant, Billings, Mont.; Al Todoroff, editor and publisher of *Freezer Provisioning* magazine; and Bob Madeira, executive director of NILFP, it was indicated.

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Experienced manufacturer of refrigerated cabinets wants additional manufacturing of refrigerated insulated cabinets, special purpose cabinets, refrigerated vending machine.

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Thinking of —
- **changing territories**
- **expanding your territory**
- **taking on new lines—**

Check the
CLASSIFIED ADS
on page 45

Your opportunity may be there.

W-S Offers Monthly Distributor Pushes

ST. JOSEPH, Mich.—A new promotion every month on "RCA Whirlpool" appliances of Whirlpool-Seeger Corp. will be available to distributors, starting immediately, it was announced by Roy Howard, general advertising manager of the firm.

The monthly promotions are intended to offer a new activity to distributors and their dealers on a regularly scheduled basis, Howard said. The promotions will be flexibly designed, so that they may be used at the time of year and by the number of dealers appropriate to the individual market. At the option of the distributor any promotion may be adapted to any specific model in the RCA Whirlpool line of appliances it was explained.

Wyoming Kills Bill To Ban Utilities From Selling Appliances In Showrooms

CHEYENNE, Wyo.—Prior to its recent adjournment, the Wyoming Legislature killed a bill which would have prohibited public utilities from using utility plant showrooms and employes to engage in retailing or wholesaling major appliances or electric housewares.

The bill was aimed at stopping appliance sales operations by utilities operating in the state. Most of its support came from Sheridan County which was the scene last year of a battle by Montana-Dakota Utilities Co. for a rate increase.

Independent major appliance dealers at Sheridan protested that the utility was writing off expenses of its appliance selling operations against the utilities portion of the business. This constituted unfair competition for private firms, it was said.

Opponents of the bill in the Legislature insisted the legislature was being asked to eliminate competition by passing the measure.

Amana Introduces 'Deepfreeze' Promotion Kits

AMANA, Iowa — Promotional materials ranging from a 10-ft. long pennant to full-color envelope stuffers are included in the point-of-sale, direct mail, display, and advertising kit that Amana Refrigeration, Inc. is offering dealers to help them promote the sale of "Deepfreeze" chest freezers.

Back on the market for the first time in nearly a year, three Deepfreeze chest freezers now are "made only by Amana."

WESTINGHOUSE OFFERS

5-YEAR WARRANTY

on shaded-pole motors

on permanent-split capacitor fhp motors

IT'S THE MOTOR INDUSTRY'S FIRST FIVE-YEAR WARRANTY

Westinghouse now presents another motor industry first—the five-year warranty. Both shaded-pole and permanent-split capacitor fractional horsepower motors are guaranteed to give you trouble-free service for five years from date of manufacture when used on factory-approved applications.

New and advanced motor designs make this remarkable offer possible. The unique lubrication system of these motors is typical of the many design advancements.

There's enough oil in the new Westinghouse shaded-pole and permanent-split capacitor motors to keep them running at peak efficiency for at least five years —without *any* added lubrication. Here is a quieter, cleaner, cooler, more positive lubrication system.

For the complete story on these motors and the "Five-Year Warranty", just contact your Westinghouse sales office nearby. Or, write direct to Westinghouse Electric Corporation, Small Motor Division, Lima, O.

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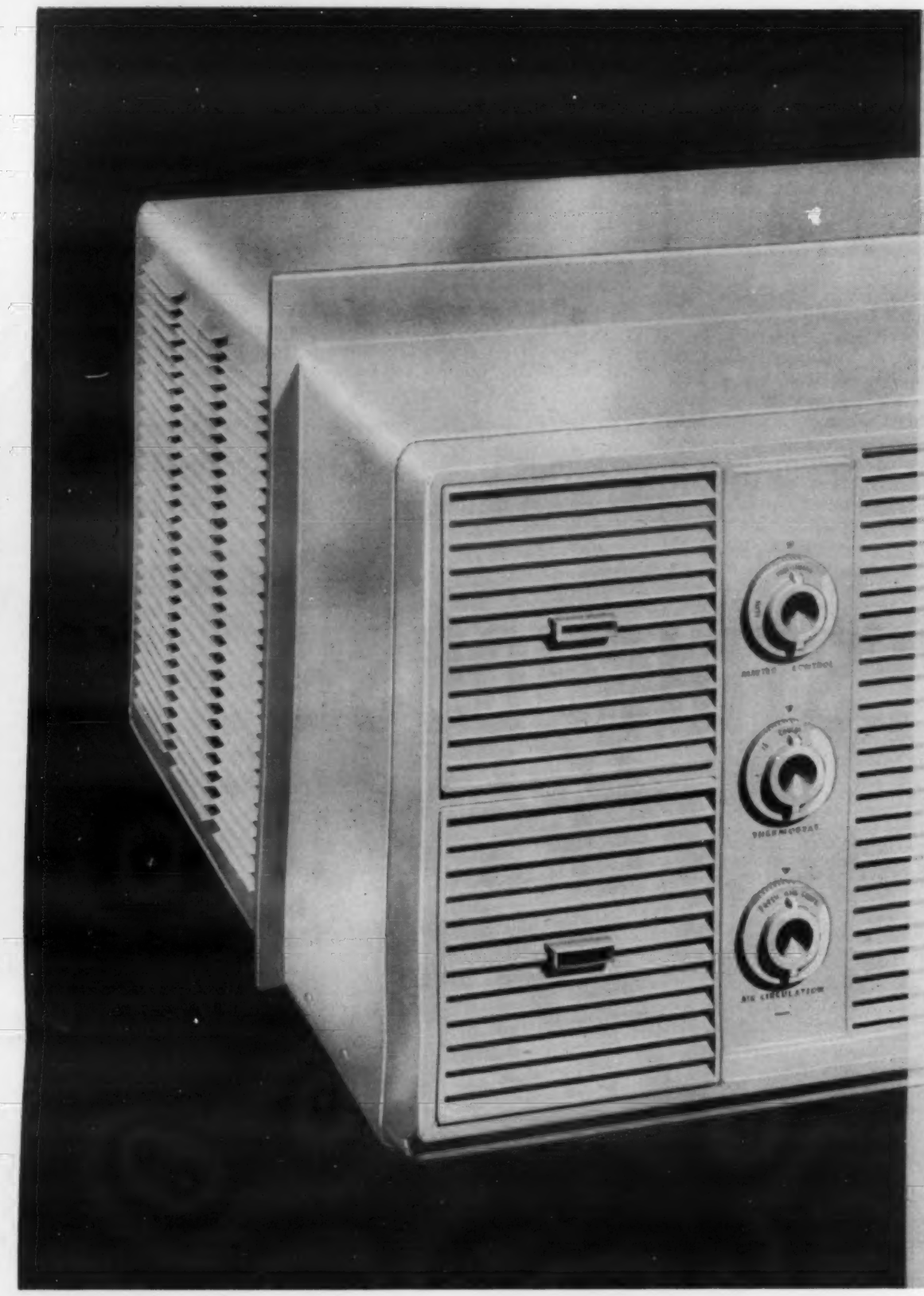
YOU CAN BE SURE...IF IT'S Westinghouse



More than *Half* of all Room Air Conditioners Are sold by Dealers who Read the NEWS!

ROUND-THE-CALENDAR DEALERS ARE THE MOST IMPORTANT OUTLETS FOR ROOM COOLERS

Who *sells* room air conditioners? Appliance dealers? Discount and specialty houses? Air conditioning contractors and dealers? A recent survey conducted by the NEWS traced the sale of room air conditioners and showed that *more than 50%* of them were sold by subscribers to AIR CONDITIONING & REFRIGERATION NEWS.

These dealer and contractor subscribers who represent the backbone of the air conditioning industry are in business 12 months out of the year—selling, servicing, and installing. And they stay in the air conditioning business from year to year!

They are not dependent upon hot weather streaks and fast merchandising programs to build a temporary volume. They control over half of the room air conditioner market because their reputations and *sales efforts* in their own communities have built strong buyer confidence.

Like all other important groups in the air conditioning and refrigeration industry, these men turn to the NEWS every Monday morning for information that helps them sell! They find in the NEWS more than twice as much editorial material devoted to them and their problems as in any other publication in the field. Over the years, they have come to look upon the NEWS as a part of their business equally important as the tools and equipment they work with every day!

Advertising in the NEWS designed to inform and *sell* this contractor-dealer group will go to the very men you want to reach—the men who control over 50% of the room air conditioner market.

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CHICAGO, 134 S. LaSalle St., FRanklin 2-8093, Allen Schildhammer.
DETROIT, 450 West Fort St., WOodward 2-0924, J. B. Sullivan.
LOS ANGELES, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon.

J. M. Bickel, Distributor-Dealer Marketing System Pioneer For Air Conditioning Industry, Retires from Carrier Corp.

SYRACUSE, N. Y. — Retirement of John M. Bickel, vice president of Carrier Corp. and general sales manager of its Unitary Equipment Div., was announced effective April 1. Bickel will be retained as a consultant by the air conditioning firm.

Bickel pioneered in the development of the air conditioning industry's present distributor-dealer marketing methods, and is generally credited with the establishment of a sales and distribution pattern which has been generally followed in the sale of air conditioning for residences and smaller commercial establishments.

Developed Dealer Program In '32

The veteran air conditioning industry executive developed his dealer program during the depths of the depression in 1932. Through his efforts in establishing local dealers to do sales and installation work, company volume rose about $1½ million dollars during the first full year of operation.

Suggested Post-War Planning Program

During the height of the last war Bickel suggested a post-war planning program to the nation's industries. As a result of his efforts, formal committees were established, representing America's largest industries to analyze the market potential for various products. They also considered methods of rapid integration into industry for returning servicemen.

These committees functioned for over a year, doing extensive planning for the orderly transition from a war to a peace-time economy.

Born in Racine, Wis., and a graduate of the University of Wisconsin, Bickel has been engaged in sales work throughout his business life. Immediately after World War I, he joined the Curtiss Airplane & Motor Corp. in New York City as assistant sales manager.

RETIRING vice president and general sales manager of Carrier Corp.'s Unitary Equipment Div., (l.) seen with Joseph B. Haverstick of National Association of Home Builders during a recent tour of Carrier's Syracuse, N. Y. manufacturing facilities.

He later joined the Curtis Publishing Co., and subsequently, engaged in sales activities for the Schick Repeating Razor Co., Servel, Inc., where he was advertising and sales promotion manager, and the Holmes Refrigerator Co. as sales manager.

Joined Carrier In 1929

Bickel joined Carrier Corp., then located in Newark, N. J., in 1929 and set up the air conditioning industry's first dealer organization three years later.

At that time most organizations dealing with both heating and cooling were ice and coal companies. Those in the heating line, selling furnaces, did not care about cooling. Those in commercial refrigeration were not interested in heating.

Bickel began to develop his organization. He went so far as to provide engineers for dealers. These engineers came from Carrier, when the pinch of the depression was resulting in the furloughing of technical men.

In one instance, he franchised a dealer in the mid-south, and sold him $5,000 worth of initial equipment. Since no one knew the market's potential, the size of the order was determined by almost pure guesswork. Five years later, Bickel had a friendly letter from the dealer, saying: "You can come back now. I've finally sold the last of the equipment you shipped me."

One of the most perplexing of his many obstacles lay in convincing engineers that air conditioning could be done by dealers, and that "Carrier's secrets" would not be "given away."

When Bickel started his dealers in air conditioning, Carrier equipment was taken on as a subordinate line. Within a short time, air conditioning became their major interest.

During World War II, from 1939 to 1945, comfort conditioning could not be stressed because of necessary priorities and allocations for the war effort. Dealers were warned to diversify their interest in order to survive.

Developed War-Time Dealer Program

Bickel developed a program which helped maintain them during the war years. He urged the sale of equipment produced by other manufacturers, such as dictating machines and activated carbon for air purification.

As the market for packaged equipment developed after the war Carrier used these old-line dealers as distributors. Today they are the backbone of the air conditioning firm's nationwide distributor-dealer organization. And directing them, until his retirement from active service this year, was John M. Bickel, as Carrier vice president and divisional general sales manager.

An excellent speechmaker, "Jack" Bickel has a sharp but kindly wit that has led to well-remembered anecdotes that have become something of a legend throughout the industry:

When he was showing a colored movie portraying a vacation spot to which sales contest winners would go, he told the assembled distributors and dealers: "For years you've dragged me to your homes to see your colored motion pictures, now I've got you where you're going to have to look at mine."

Salesman Among Engineers

He got a kick out of the fact that he was an all-out salesman working among a host of engineers, and one of his expressions was "I'm the kind of a man to whom a monkey wrench is a mass of intricate machinery."

And he liked to tell how the late Dr. Willis Carrier tried to use the expression, and wound up with "Jack Bickel over there always says a monkey wrench is pretty complicated."

Despite the fact that he traveled nearly 50% of the time he didn't like to fly. To an associate who insisted flying was the best means of travel, Jack quipped:

"You're going to have to get over your fear of trains."

His wife Mary is an authoress, and when she received her first check in payment for a story Jack waved it at guests saying "Now we can have a joint bank account."

Some idea of how he was regarded by his dealer organization is indicated in a letter he received from a dealer who learned of his retirement plans:

"Best wishes and thanks.

"Thanks for the humor that was a compass and not a weapon.

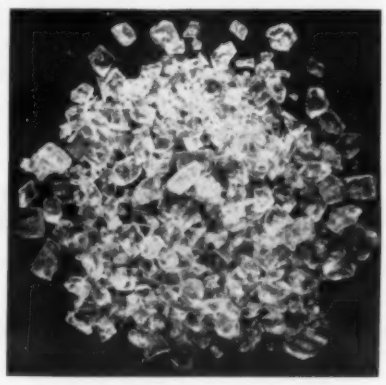
"Often it guided those of us too stubborn to be influenced by logic.

"We will need both your humor and guidance in the years ahead."

Jack Bickel is a brother to Frederic March, the actor, but one of his associates at Carrier declares:

"We always say that Frederic March is Jack Bickel's brother."

Guard Against SCALE and RUST with Slow-Dissolving, Self-Feeding



VAPCO NUGGETS

for Evaporative Condensers and Cooling Tower Systems

The phosphate treatment that holds *more* solids in solution.

Unique nugget form assures proper rate of dissolving for most efficient protection.

SEE YOUR WHOLESALER OR WRITE US TODAY

Other Vapco Products

- VAPCO HIB
- ICE MACHINE CLEANER
- SCALE REMOVER
- SLIME-X

GARMAN CO., INC., St. Louis 23, Mo.

FURNAS ELECTRIC CONTROLS

THE BEST FOR AIR CONDITIONING AND REFRIGERATION

These starters and contactors provide across-the-line control of hermetic and general purpose motors used in the air conditioning and refrigeration industry. They have been specifically designed to satisfy the particular performance requirements of the loads and duty cycles, plus the space and economic requirements set forth by the air conditioning and refrigeration industry.

For more information write for Bulletin 5519.
Furnas Electric Company, 1111 McKee St., Batavia, Illinois.
A24

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

DETECT TROUBLE FAST!

IN ANY AIR CONDITIONING AND REFRIGERATION LIQUID LINE

It's easy to detect trouble quickly in refrigeration lines with this indicator. Letter "K" is etched on pyrex heat-resisting tube which shows through sturdy brass body at sight port. When "K" is not magnified, it indicates a shortage of refrigerant or a clogged line. Available in male and female flare sizes. Maximum operating pressure —300 p.s.i. and maximum temperature 200° F. Easy to install.

See your Kerotest wholesaler!
Ask for Model No. R81C.

KEROTEST

KEROTEST MANUFACTURING CO.
2502 Liberty Avenue
Pittsburgh 22, Pa.

Fisher Is Gibson Mgr. Of Refrigerator Sales, Heinlen Ad Dept. Chief

GREENVILLE, Mich. — Gibson Refrigerator Co., a division of Hupp Corp., has appointed Frank H. Fisher manager of refrigerator sales and Dale H. Heinlen manager

F. H. Fisher

D. H. Heinlen

of advertising and sales promotion, it was announced by W. C. Conley, vice president in charge of Gibson sales.

Fisher, formerly manager of Gibson's advertising and sales promotion department, assumes the position formerly held by Frank L. Sacha, resigned. In addition to his service with Gibson, Fisher's appliance industry experienced has included top product manager posts with Frigidaire Div. of General Motors Corp., Hotpoint Co., and The Coolerator Co.

Heinlen brings to his new post of advertising and sales promotion manager three years' experience as assistant manager of the department and more than five years' service in Gibson's export and service departments.

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

NOTICE TO SMALL FIRMS

Purchasing and Contracting Office, Camp Wolters, Texas.
PROCUREMENT AND INSTALLATION OF 20 TON AIR CONDITIONING UNITS—5 ea.—IFB AIV-41-184-57-ENG-31—Bid Opening 11 April 57.

Richmond Quartermaster Depot, Richmond, Va., Purchasing Division.
ALTERATIONS, MODIFICATIONS, AND ADDITIONS TO HEATING SYSTEM, U. S. Army Reserve Training Center, Sherwood and Bristol Sts., Richmond, Va.—Job—IFB QM 44-073-57-32B—Bid Opening 10 April 57.

ARMY

QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.
ICE CREAM CABINETS, 3 line items Mil Spec. MIL-I-0020565B—various quantities—IFB 529B—Bid Opening 10 April 57.

Purchasing and Contracting Division, Fort Riley, Kan.
REPLACEMENT OF FORCED WARM AIR FURNACES in Forty-one cantonment type barracks, Fort Riley, Kan.—Job—IFB AV 14-040-57-44—Bid Opening 10 April 57.

U. S. Army, Engineer District, Baltimore Corps of Engineers, 24th St. and Maryland Ave., Baltimore, Md.
CENTRAL HEATING PLANT, Olmsted Air Force Base, Pa. Construction on agraded site of a heating plant structure approximately 84 feet long by 62 feet wide, 4 stories high, heating plant consists of 2 controlled or forced circulation type boilers, each having normal continuous output of 25,000,000 B.t.u. per hour and each capable of producing high temperature water at 250 p.s.i.g. and 400° F.—Job—IFB ENG-18-020-57-33B—Bid Opening 25 April 57.

Corps of Engineers, U. S. Army, Office of the District Engineer, Savannah Dis., 200 East St. Julian St., Savannah, Ga.
CONSTRUCTION OF ADDITION TO CENTRAL HEATING PLANT, Kelley Hill, Fort Benning, Ga.—Job—IFB Eng-09-133-57-36—Bid Opening 29 April 57—Bid Sets will be available about 29 March 57.

NAVY

District Public Works Office, Sixth Naval District, Naval Base, Charleston, S. C.
AIR CONDITIONING EXISTING MAINTENANCE HANGAR, Bldg. 67, Naval Air Station, Cecil Field, Fla.—Job—IFB 10375/57—Bid Opening 11 April 57.
AIR CONDITIONING OF OFFICE SPACES, Hangar Nos. 13 and 14, Naval Air Station, Cecil Field, Fla.—Job—IFB 10394/57—Bid Opening 11 April 57.

District Public Works Office, Sixth Naval District, Naval Base, Charleston, S. C.
ALTERATIONS TO AIR CONDITIONING SYSTEM, Bldg. 90, Naval Auxiliary Air Station, Mayport, Fla.—Job—IFB 10340/57—Bid Opening 23 April 57.
AIR CONDITIONING of Post Exchange, Bldg. No. 7520, Marine Corps Supply Center, Albany, Ga.—Job—IFB 1036/57—Bid Opening 25 April 57.

Supply Dept., Purchasing Div., Boston Naval Shipyard, Boston, Mass.
CONDENSING UNIT ASSEMBLY WATER COOLED 2 ton capacity in accordance with Specification MIL-R-16743C(Ships) (QPL)—6 ea.—IFB 111-359-57(B) Bid Opening 8 April 57. Requests for invitation shall be received not later than 10 days from date of publication of this synopsis.

Procurement Office, Marine Corps Recruit Depot, Parris Island, S. C.
Supplies and services necessary for REPAIR AND REPLACEMENT OF REFRIGERATION for Commissary Store in accord with Specs.—Job—IFB-SA-671-57B—Bid Opening 10 April 57.

AIR FORCE

Ogden Air Materiel Area Directorate of Procurement and Production, Hill Air Force Base, Utah.
INSTALL AIR CONDITIONING SYSTEM for medical dispensary, Building S-106, Hill AF Base, Utah—Job—IFB 42-600-57-283B—Bid Sets will be available for distribution on or about 20 March 57—Bid Opening 8 April 57.

Ogden Air Materiel Area, Directorate of Procurement and Production, Hill Air Force Base, Utah.

ADVANCE NOTICE

INSTALL AIR CONDITIONING SYSTEM in IBM room of building number 103 Hill AF Base, Utah—Job—IFB 42-600-57-285B—Bid Sets will be available for distribution on or about 25 March 57—Bid Opening 15 May 57.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 3, Business Service Center, 7th and D Sts., S.W., Washington 25, D. C.
AIR CONDITIONING OF JURY DELIBERATION ROOM, U. S. Post Office and Court House, Roanoke, Va.—Job—IFB GS-R3-B-5604—Bid Opening 4-9-57.
AIR CONDITIONING of Jury Deliberation Room, U. S. Post Office and Court House, Elkins, W. Va.—Job—IFB GS-R3-B-5603—Bid Opening 4-9-57.

General Services Administration, Region 3, Business Service Center, 7th & D Sts., S.W., Washington 25, D. C.
CONDENSER, AIR CONDITIONING, Air Cooled, for outdoor installation, capacity 312,840 B.t.u./hr.—1 ea.—IFB R2D-84586-R—Bid Opening 4/8/57.

General Services Administration, Region 6, Business Service Center, 2306 East Bannister Rd., Kansas City 14, Mo.
AIR CONDITIONING CERTAIN OFFICES, Minneapolis, Minn., Buzza Building—Job—IFB CR 250—Bid Opening 4-16-57.
AIR CONDITIONING LABORATORY, St. Paul, Minn. Post Office—Job—IFB CR 251—Bid Opening 4-16-57.
AIR CONDITIONING COURT SPACE, Dubuque, Iowa Post Office—Job—IFB DC 253—Bid Opening 4-15-57.

General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta 23, Ga.
AIR CONDITIONING JURY ROOM, Gainesville, Ga., Post Office and Court House—Job—IFB CR4-1616A—Bid Opening 4-26-57.

General Services Administration, Region 5, 575 U. S. Courthouse, 219 So. Clark St., Chicago, Ill.
REFRIGERATORS, Fed. Spec. AA-R-211c & Amnd. 1—128 ea.—IFB DCH-21618-1—Bid Opening 4-10-57.

General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta 23, Ga.
AIR CONDITIONING DUCTWORK, Jacksonville, Fla., Auchter Bldg.—Job—IFB CR4-1620—Bid Opening 4-26-57.

Dealers To Co-Sponsor '57 Nashville Electric Show

NASHVILLE, Tenn. — The Nashville Electrical Dealers Association recently announced it will co-sponsor the 1957 Electric Show here with the Nashville Electric Service.

Show dates are Monday, April 29 through Friday, May 3. Location will be at NES Drive-thru Garage, Electric Center, Church St. at 13th Ave.

PRESSTITE
Insulation Adhesives

- quick, permanent adhesion
- long-lasting high bond
- excellent resistance to temperature extremes
- brush, spray or flow

See your wholesaler or WRITE

PRESSTITE-KEYSTONE
Engineering Products
COMPANY
39th & Chouteau, St. Louis, Mo.

PRIMORE AUTOMOTIVE AIR CONDITIONING VALVES

are rapidly becoming the standard of the industry

Here's why—

- **Designed especially for Automotive use**
- **Precision manufactured**
- **Hydrogen brazed steel construction cuts costs**

Primore's engineers have designed a series of Compressor Pad Valves and fittings especially for Automotive Air Conditioning units.

In addition, Primore engineered valves are also available for automotive air conditioning components such as Condensers, Receivers, Evaporators, etc.

NEW PRIMORE REFRIGERATION VALVE CATALOG NOW AVAILABLE

Complete details and data for Household and Commercial Refrigeration, Residential and Automotive Air Conditioning valves and fittings. Write, or phone for your copy.

Primore Sales, inc.
310 National Bank Bldg. Adrian, Mich.
designing · sales · engineering

Clinic To Show Proper Way To Estimate Cooling Jobs

DETROIT—Instruction in the proper methods for estimating air conditioning jobs and thorough field application and service—both commercial and residential—is the objective of a clinic at Lawrence Institute of Technology here.

Sponsored by Bryant Mfg. Co., application, sales, and service are embraced in the agenda. The conference leader is Charles Mousseau, the company's application engineer.

Half-day sessions of the clinic are scheduled on Wednesday afternoons for six weeks. The participants are some 40 key principals, sales and service representatives of the Bryant dealer organization.

Here is your gauge...

...for permanent installation on **FREON-12** and **FREON-22** systems...

Today's gauge for today's job on those Freon systems. Highly accurate and built down to the last detail to *stay* accurate.

The corresponding temperature scales are in color. Note the wide ranges of sizes and readings in F-12 and F-22 types.

Here is the gauge for permanent installation on refrigeration systems . . . with the Marsh "Recalibrator" to keep it permanently accurate. Write for facts or ***See Your Jobber***

MARSH INSTRUMENT CO. Sales Affiliate of Jas. P. Marsh Corp.
Dept. D, Skokie, Ill. • Marsh Instr. & Valve Co. (Can.) Ltd.
8407 103rd Street, Edmonton, Alberta, Canada

Wide Range of Sizes and Pressures

- Dial sizes: 2½", 3½" and 4½" for Freon-12 or Freon-22. Dial size, 2½" only for gauges with both Freon-12 and Freon-22 scales.
- Dial range for pressure gauges: 0-300 lbs. and 0-400 lbs. For compound gauges, 30" x 150 lbs., 30" x 300 lbs., 30" x 400 lbs.
- All gauges have "Recalibrator." All except 3½" and 4½" gauges standard with ⅛" male bottom connection and restriction screw in socket. 3½" and 4½" gauge have ¼" N.P.T. connection.

MARSH *Refrigeration Instruments*

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

Edwards
CO-AXIAL CONDENSERS

The NEWEST design in water-cooled refrigerant condensers. Used by major equipment manufacturers because of these—

SELLING ADVANTAGES:

- **Use 35% less water**
- **Cost reduced 30 to 40%**
- **Stock sizes from ½ to 7½ tons—LARGER capacities available**
- **No internal joints**
- **Easy installation**
- **Many compact shapes**

A TYPICAL COMPACT CONFIGURATION

Contact our engineering department for FREE technical assistance, regarding your specific installation requirements.

Send for catalog TT-653 TODAY or call TERHUNE 5-2808

EDWARDS ENGINEERING CORP.
100 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

For more information about products advertised on this page use Information Center, page 31.

Expert Opinion--

(Concluded from Page 1, Col. 4)

'57 because of the continuing cold and generally unpleasant weather, combined with a late Easter, and the April 15 income tax deadline." And one executive said that its sales of refrigerators and freezers to dealers had shown an increase of nearly 15% in the first three months of the year and that retail sales were going well.

Question: What's the situation on pricing, and what does it have to do with the general picture in appliance retailing?

Answer: "There's been an air of instability in appliance pricing for the past couple of years," said one executive. "There's talk that we are now getting around to 'realistic' pricing of appliances, but I don't see anything realistic about a price that leaves no profit or commission for the manufacturer, distributor, dealer, or salesman.

"Some of this instability stems from the current popularity of 'mass merchandising' techniques. Discounts have been cut so that heavy advertising can be used to lure the public into the stores, but the trouble is that all the advertising at the local level emphasizes nothing but price merchandise.

'CONDITIONED BY PRICE STORY'

"When the prospect does get into the store he is so conditioned by the price story, and the dealer hasn't enough margin to develop a sales force that can 'sell up' to better merchandise, the whole merchandising picture goes into a strictly price deal.

"An especially disturbing phase of current pricing practices is that of making a drastic price cut on some model in the middle of the line. This kicks around pricing and merchandising plans on every line in the industry, and it's no wonder that some manufacturers have to shut down their plants and change their thinking on models they should make.

Question: Is there too much production capacity in the appliance industry?

Answer: "Maybe not too much for the market that could come up a few years hence, but there probably is now—when an effort is made to utilize that capacity to its fullest. Some of the trouble with over-capacity probably stems from some over-optimistic views of the market that have resulted from faulty market research.

'DON'T LET ITEMS PILE UP IN FIELD'

"If there is over-production, it is better that it be corrected immediately through cut-backs, rather than to let the merchandise pile up in the field."

In the production cut-backs, General Electric laid off some 300 employes, but said that wherever possible, employes who are on furlough would get new jobs gradually opening up in the room air conditioner department.

Westinghouse put its production workers at the Columbus, Ohio appliance plant on a four-day week, and furloughed some workers at the Mansfield plant.

Kelvinator halted its appliance production for five days at its Detroit and Grand Rapids plants, explaining that "within the past week certain moves have been made which we expect will change the industry pattern in certain refrigerator models. We are closing to adjust our materials authorizations to the new situation."

The "change in the industry pattern on certain refrigerator models" was said to be likely to stem from certain price reductions made in various models. Trade reports said that Frigidaire had cut dealer prices from $10.50 to $43.80 on various models, and Westinghouse was said to have made a reduction on the dealer price of its model TFK-12, a double-door unit. Other manufacturers declined to comment on what price action they might take, but Hotpoint was introducing five new promotional models.

Norge Predicts Refrigerator Market To Climb April 8, Hit Peak In August

CHICAGO — Based on 1955 and 1956 figures, the retail refrigerator market is due to start climbing upward on Monday, April 8, Norge Div., Borg-Warner Corp., has predicted.

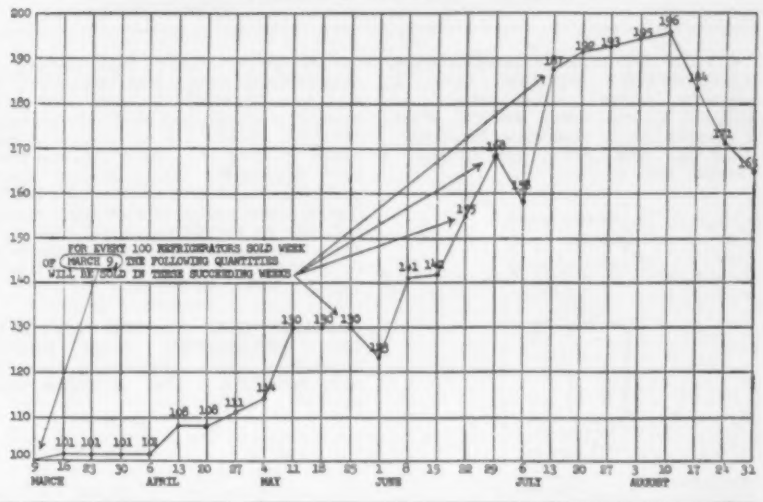
"For every 101 units sold during the week ending April 6, 108 refrigerators will be sold during the weeks ending April 13 and 20. The curve will reach a plateau during the middle of May at 130 units for every 100 sold at the end of the March 9 week, but then take off to reach a high of 196 units during the week ending Aug. 10," according to Harold P. Bull, vice president of distribution.

The curve will start downward during the week ending Aug. 17, calculations show.

The refrigerator retail selling pattern chart was prepared by the Norge marketing research department and based upon a study of industry selling patterns during 1955 and 1956.

"This chart will guide distributors, wholesalemen, and serve as stimulant to dealer in upping his merchandising effort."

Industry Refrigerator Retail Selling Pattern (Week Ending March 9=100%)



Manufacturers of Self-Service Defrost Cabinets

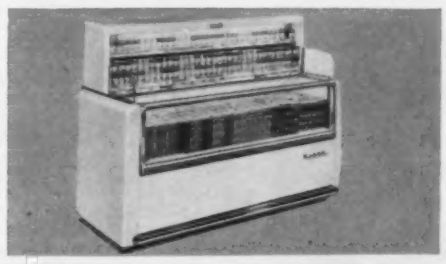
Klixon C4391
Hermetically Sealed Thermostat

Count on KLIXON Thermostat CONTROLS

for Trouble-free Service

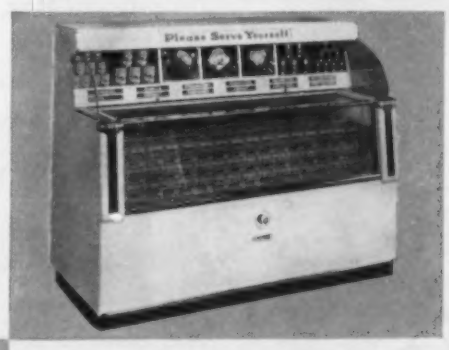
Here are two examples of how manufacturers feel about Klixon Thermostats:

Building and maintaining high quality product performance is a day in and day out job with manufacturers of self-service defrost cabinets. And more and more of these manufacturers are specifying and using Klixon hermetically sealed, fixed temperature controls to help assure this product performance.



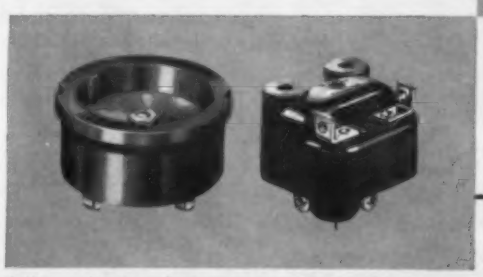
Karl Weber, President of Weber Showcase & Fixture Co., Inc., manufacturers of the Weber Blizzard 161 Automatic Defrost Ice Cream Cabinet —

"Klixon Thermostats have helped make the Weber Blizzard 161 truly the 'jewel of the industry'."



George Davis, Chief Engineer, Savage Arms Corporation, makers of the Savage Circulating Air Type Self Service Merchandising Cabinet —

"We feel that the performance of Klixon Thermostats has contributed appreciably to the success of our Automatic Defrosting Cabinet under widely varied field conditions."



Klixon Motor Protectors and starting relays help refrigeration compressors deliver maximum safe output under adverse operating conditions.

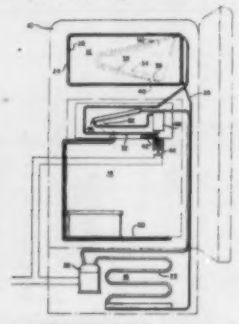
You, too, can build and maintain a high reputation for your freezer cabinets, beverage coolers, air conditioners and refrigerated units by using Klixon Controls. Write today for Bulletins THSN-4 and THSN-9A.

METALS & CONTROLS CORPORATION
Spencer Thermostat Division
2404 Forest Street, Attleboro, Mass.
KLIXON®

PATENTS

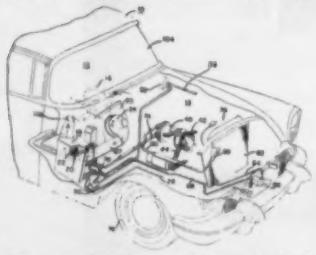
Week of Dec. 18 (Concluded)

2,774,221. TWO-TEMPERATURE REFRIGERATING SYSTEM. John H. Heidorn, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application July 14, 1953, Serial No. 367,867. 6 Claims. (Cl. 62—4.)



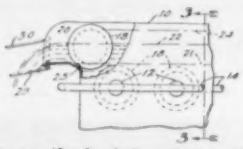
6. In a refrigerating system having a pair of evaporators connected in series wherein the last of said evaporators is adapted to be defrosted cyclically, means forming a pair of insulated compartments for separately enclosing said evaporators, an accumulator for momentarily storing overflow refrigerant from said first evaporator section before being supplied to said second evaporator section, said accumulator comprising an outer receptacle having an inlet connected to said first evaporator section, an outlet tube for conveying liquid refrigerant from said accumulator to said second evaporator section, said outlet tube being arranged to enter the upper end of said receptable and extending downwardly into the lower end thereof and having a vent hole provided in its wall adjacent the upper end of said receptacle.

2,774,222. VEHICLE REFRIGERATING APPARATUS. James W. Jacobs and Daniel J. Barbulesco, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application May 19, 1954, Serial No. 430,890. 7 Claims. (Cl. 62—4.)



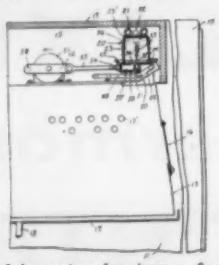
1. In combination with a vehicle having a passenger compartment and an engine compartment, an engine within said engine compartment for propelling said vehicle, a windshield forming a portion of the front wall of said passenger compartment, a compressor, means for transmitting power from said engine to said compressor, a condenser, an evaporator, and refrigerant flow connections between said compressor, condenser, and evaporator, means for circulating air for said passenger compartment in thermal exchange relationship with said evaporator, an auxiliary air cooling unit for cooling air for one portion of said passenger compartment, means for circulating a heat transfer liquid between said evaporator and said auxiliary air cooling unit, duct means for directing the air cooled by said evaporator into the forward portion of said passenger compartment, and air directing baffle means at the outlet of said duct means operable to selectively direct the outgoing air either onto said windshield or rearwardly away from the lower edge of said windshield.

2,774,223. ICE MAKING METHOD AND APPARATUS. Glenn Muffly, Springfield, Ohio. Application July 20, 1950, Serial No. 174,944. 15 Claims. (Cl. 62—7.)



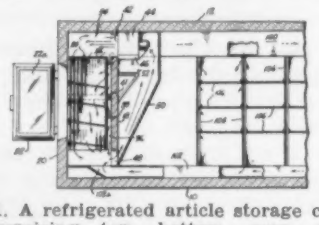
1. The method of forming a plurality of relatively thick pieces of ice between adjacent wetted surfaces facing each other by cooling a plurality of small areas of each of said surfaces to form separate pieces of ice thereon, causing water to flow over the ice while forming on said cooled areas, continuing said cooling until the pieces of ice which have formed on a pair of opposed areas have increased in thickness until they have made contact with each other and frozen together at thicker sections of each piece to form a double-thickness solid piece of ice, and then releasing the last said piece of ice from said surfaces.

2,774,224. ICE CUBE MAKING REFRIGERATOR. John R. Bayston, Encino, Calif., assignor to John R. Bayston, trustee, Icecrafter (Liquidating) Trust, Encino, Calif. Application Jan. 31, 1955, Serial No. 484,925. 9 Claims. (Cl. 62—7.)



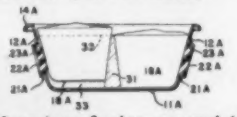
1. A refrigerator having a food compartment and an ice bin located therein to receive ice cubes for refrigeration thereof, an evaporator including an inverted cell open at the bottom and positioned to discharge ice cubes into said bin, means controlled by the temperature to alternately generate a freezing cycle and a defrosting cycle in said evaporator, a header movable into and out of evaporator closing position having a water passage communicating with nozzle orifice positioned centrally of said cell through which water is sprayed upwardly therein during the freezing cycle, said header having a return channel communicating with said cell for receiving unfrozen water, a water tank in said header connected with said return channel having a source of water supply, a motor driven pump mounted on said header having its intake side connected with said tank for circulating water under pressure through said passage into said cell during the freezing cycle, a motor controlled by said means operably connected to said header for reciprocating it between evaporator opening and closing positions, and a guide for initially tilting said header downwardly and transversely free of said evaporator to opening position.

2,774,225. REFRIGERATED FOOD DISPLAY CABINETS. Frank C. Grilley and Morris M. Smith, Tacoma, Wash., assignors to Room-Temp Lockers, Inc., Tacoma, Wash., a corporation of Washington. Application Aug. 19, 1955, Serial No. 529,539. 10 Claims. (Cl. 62—89.5.)



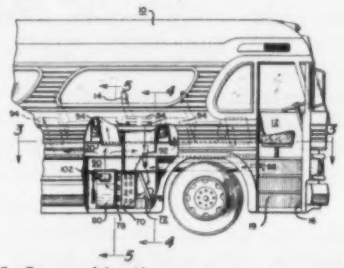
1. A refrigerated article storage case comprising top, bottom, rear, and opposite-end outer walls forming an insulating closure, said closure having a front wall including at least one access door therein permitting access into said closure, top, rear, and opposite-end inner walls mounted in said closure at respective locations spaced inwardly thereof from the corresponding outer walls, thereby to form a storage compartment accessible through said door, and thereby also to form top, rear, and opposite-end wall air ducts between corresponding outer and inner walls of said closure, said inner walls comprising rigid material panels of perforate form permitting passage of air freely therethrough over substantially their entire area adjoining said storage compartment, a plurality of perforate storage racks mounted generally horizontally in said storage compartment at successively different heights therewithin to support refrigerated articles thereon to be stored, means for introducing refrigerated air into the top wall duct and into the upper ends of the rear and opposite-end wall ducts, means to withdraw refrigerated air from the bottoms of said rear and opposite-end air ducts and from the bottom of said storage compartment, and baffle means extending generally horizontally across substantially the full widths respectively of said rear and opposite-end wall ducts generally intermediate the tops and bottoms thereof for blocking descent of refrigerated air therein, thereby to divert such air through said perorate rear and opposite-end inner walls into said storage compartment above said baffles and to induce the withdrawing of refrigerated air into said rear and opposite-end wall air ducts below said baffles by said withdrawal means.

2,774,226. FREEZING DEVICE. Edmund F. Schweller, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Dec. 6, 1954, Serial No. 473,107. 2 Claims. (Cl. 62—108.5.)



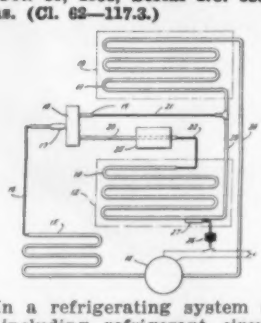
1. A freezing device comprising, an elongated sheet metal tray provided with a row of compartments in which water is to be frozen into separated ice blocks, said tray having an uninterrupted continuously flat bottom adapted to be supported on a freezing member whereby to retain the fast freezing characteristics of the metal tray, at least one wall of each of said compartments being inclined outwardly from said bottom of the tray to the top thereof, an upright side wall of said tray having spaced apart openings therein each opposed to the said one wall of said compartments, the edge portion of said tray side wall adjacent openings therein being flanged outwardly and forming a depression therein, a resilient membrane in each opening in said tray side wall and interlocked with said edge portion of said openings, said membranes filling said depressions and having their inner surface flush with the inner surface of said tray side wall, said membranes being exposed at a side of said tray, said membranes being manually flexed one at a time in succession throughout the length of said tray toward an inclined wall of a compartment to selectively pry a single ice block thereagainst, and said prying action shifting said single ice block in a straight line direction upwardly along said inclined wall to position a portion of said single ice block above a compartment wall while leaving other ice blocks in said device bonded to said tray.

2,774,227. AIR CONDITIONING APPARATUS FOR BUSES AND THE LIKE. Hans O. Schjolin and Karl Schuster, Birmingham, Mich., assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application July 23, 1953, Serial No. 369,910. 10 claims. (Cl. 62—117.)



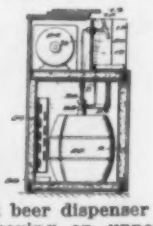
2. In combination, a passenger vehicle having a passenger compartment; mean forming a machinery compartment adjacent said passenger compartment; air conditioning apparatus for cooling the air in said passenger compartment; said air conditioning apparatus including an evaporator, a compressor, a condenser and refrigerant flow connections between said evaporator, compressor and condenser; said compressor and condenser being mounted in said machinery compartment; means for supporting said condenser adjacent an outside wall of said vehicle; an engine for driving said compressor; said engine having a main crankshaft extending substantially parallel to the side wall of said vehicle; a power take-off shaft projecting from said engine at right angles to said shaft; a condenser cooling fan having a shaft arranged parallel to said power take-off shaft and perpendicular to said condenser; and means for drivingly connecting said shaft to said power take-off shaft, said condenser being mounted between the one side of said vehicle and said condenser fan; control means for said engine including a first ignition switch mounted in said machinery compartment and a second ignition switch mounted within said passenger compartment; a door for said machinery compartment; and means whereby closing of said door opens the first of said ignition switches.

2,774,228. PLURAL TEMPERATURE REFRIGERATORS. Parough Farman Farmaian, Philadelphia, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Oct. 30, 1953, Serial No. 389,430. 9 Claims. (Cl. 62—117.3.)



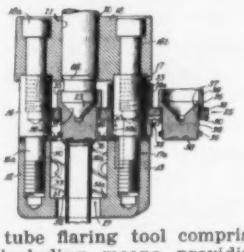
1. In a refrigerating system of the type including refrigerant circulating means, expansion means, evaporator means, and means defining a pair of alternative flow paths interconnecting said expansion means and said evaporator means, flow control apparatus effective to cause refrigerant to flow toward said evaporator means through one of said paths under one condition of operation, and effective to cause refrigerant to flow toward said evaporator means through the other of said paths under another condition of operation, said flow control means comprising: a body of material of relatively high thermal mass associated in heat exchange relation with one of said paths and being disposed to absorb heat from the ambient atmosphere during periods of idleness of said circulating means, the construction and arrangement being such that heat passes from said body to the path disposed in heat exchange relation therewith and is effective to evaporate liquid refrigerant flowing through the latter path whereby to vapor-block the same for the period of time, following initiation of operation of said circulating means, required to cause the temperature of said body closely to approach the temperature of the refrigerant flowing through the said path, whereby the flow of liquid refrigerant through the said path is delayed for a period of time which is a function of the quantity of heat contained in said body.

2,774,229. DRAFT BEER DISPENSER. Karl Thau, Towson, and August Kiel, Sr., Baltimore, Md., assignors to Kay-Tee Corp., a corporation of Maryland. Application July 25, 1955, Serial No. 523,957. 3 Claims. (Cl. 62—141.)



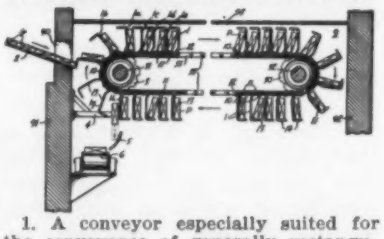
1. A draft beer dispenser comprising a cabinet having an upper compartment and a lower compartment separated by a horizontal partition, a refrigeration unit having its compressor and condensing coil positioned in the upper compartment and its expansion coil positioned in the lower compartment, a high pressure carbon dioxide cylinder mounted within the cabinet, and extending through said horizontal partition, a reducing valve connected to the outlet of said cylinder, a pipe leading from said reducing valve and adapted to be connected to a keg positioned in said lower compartment, a spigot mounted in said upper compartment and a pipe extending from said spigot into said lower compartment and adapted to be connected to said keg.

2,774,408. FLARING TOOL. George E. Franck, Riverside, Ill., assignor to The Imperial Brass Mfg. Co., a corporation of Illinois. Application May 4, 1953, Serial No. 352,929. 6 Claims. (Cl. 153—79.)



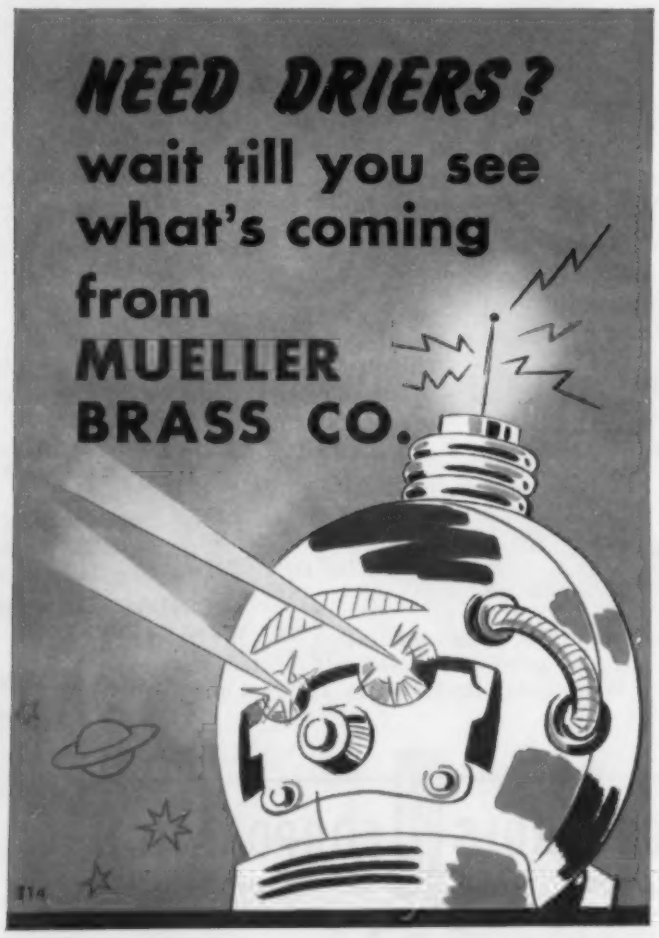
5. A tube flaring tool comprising a frame including means providing an axially elongated opening, a force applying member mounted in said opening and accurately guided thereby for axial movement, said force applying member terminating at one end in a flaring cone head, tube clamping means rigid with said frame for holding a tube to be flared in axial alignment with said force applying member, a carrier movably mounted on said frame and a flare forming adapter loosely carried by the carrier for movement relative to said carrier in the direction of movement of said force applying member and limitedly in a plane normal to its own direction of movement during the primary tube flaring operation, said adapter at one end being shaped to produce a flare on a tube in the clamping means when forced against the tube by said force applying member and at the other end having a recess complementary to the shape of and receiving the head of said force applying member with a close fit therein to be thereby placed and held in accurate alignment with the tube to be flared and said force applying member.

2,774,460. QUICK-FREEZE CONVEYORS. Charles L. Spoonhour, Seattle, Wash.; Jean E. Spoonhour, administratrix of said Charles L. Spoonhour, deseased, assignor to Lewis Refrigeration & Supply Co., Seattle, Wash., a partnership. Application March 16, 1953, Serial No. 342,481. 6 Claims. (Cl. 198—131.)



1. A conveyor especially suited for the conveyance of generally rectangular packages of standard size and shape each of which has a flat side face defining the thickness of the package, while the contents thereof are being frozen, comprising an endless chain and sprocket wheels over which said chains run, the whole arranged with the chain's upper and lower runs generally horizontally disposed, and blades spaced along said chain at intervals somewhat exceeding the thickness of the package, each blade including three rigidly connected portions, namely, an inner base portion secured rigidly to a chain link, and having an upper package-supporting surface slanted, in the upper run, downwardly and forwardly with respect to the direction of advance, a connecting portion extending in the main approximately at a right angle to the chain's upper run, from the forward edge of the base portion's slanted package-supporting of surface, being that edge which is nearer the chain, and said connecting portion being of a height overall somewhat in excess of the height of the package, and an outer flange portion extending rearwardly from the outer edge of the connecting portion back over the base portion, and generally at a right angle to said connecting portion, and being of a width to leave less spacing between itself and the next blade, in

(Continued on next page)



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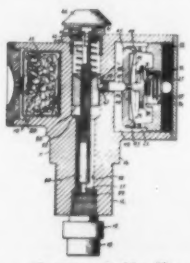
the horizontal runs of the chain, than the thickness of the package, the spacing between connecting portions of successive blades being such, with relation to the upright dimension of the package, that with the package's side face resting upon the base's slanted package-supporting surface the upper forward edge of the package will lean against the upright connecting portion of the same blade.

2,774,541. THERMOSTATICALLY OPERATED SHUT-OFF VALVE. Samuel G. Eskin, Chicago, Ill., assignor to The Dole Valve Co., Chicago, Ill., a corporation of Illinois. Application Aug. 25, 1954, Serial No. 452,142. 3 Claims. (Cl. 236—48.)



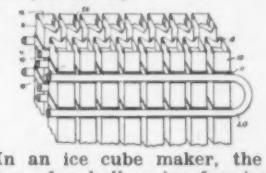
1. In a thermostatically operated shut-off valve of the class described, a valve body having a power member guided therein for movement therealong for operating a device to be operated, a cylinder extending within said valve body and forming a guide for said power member, a casing forming an outward continuation of said cylinder and containing a fusible thermal responsive material in association with said cylinder, for extending said power member from said cylinder upon predetermined temperature rises, a valve chamber within said valve body, an inlet into said valve body and chamber and an outlet therefrom, a valve seat separating said inlet from said outlet, a rectilinearly movable valve engageable with said seat, a snap acting disk supported adjacent its periphery within said valve, chamber and carrying said valve, an operating member for said disk having fulcrum points engaging said disk inwardly of its support, a rectilinear guide for said operating member, and a right angled drive from said power member to said operating member comprising a ball having engagement with said operating member, and a cam operated by said power member and movable at right angles to the axis of movement of said operating member and valve, said cam having an inclined cam surface engageable with said ball to move the same to effect movement of said snap acting disk past its dead center position, to move said valve into engagement with said seat with a snap action upon the extension of said power member from said cylinder effected by said predetermined temperature rises.

DESIGNS

179,416. ROOM AIR CONDITIONER. Clarence F. Graser, Orange, Conn., assignor to General Electric Co., a corporation of New York. Application Oct. 19, 1955, Serial No. 38,451. Term of patent 14 years. (Cl. D62—4.)

Week of Dec. 25

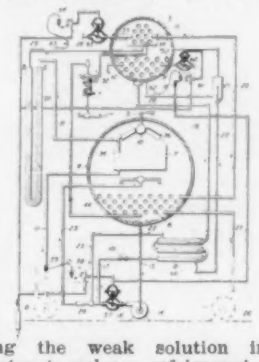
2,775,096. ICE CUBE MAKERS. Carlyle M. Ashley, Fayetteville, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application July 1, 1950, Serial No. 171,621. 15 Claims. (Cl. 62—4.)



1. In an ice cube maker, the combination of a hollow ice forming element, a plurality of bands substantially surrounding the exterior of the element and being placed in spaced relation to each other, said bands having a heat conductive value greater than the element, means to direct a stream of water through the hollow element in contact with the interior wall of the element, a refrigeration system including an evaporator placed in heat exchange relation with the bands to form spaced pieces of ice within the interior of the element, and means to harvest the formed pieces of ice.

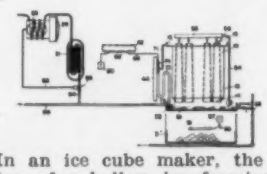
2,775,097. ABSORPTION REFRIGERATION SYSTEMS. Alexis A. Berestneff, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Original application July 13, 1946, Serial No. 683,337, now Patent No. 2,565,943, dated Aug. 28, 1951. Divided and this application Aug. 3, 1951, Serial No. 240,239. 5 Claims. (Cl. 62—5.)

1. In the method of operation of an absorption refrigeration system including an absorber, an evaporator, a generator and a condenser, the steps which consist in forwarding a weak solution of absorbent and refrigerant from the absorber to the generator,



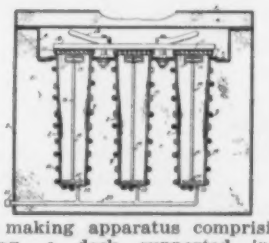
heating the weak solution in the generator to release refrigerant therefrom, condensing the released refrigerant, forwarding the condensed refrigerant to the evaporator, forwarding strong solution from the generator to the absorber, passing a heating medium through the generator in heat exchange medium to the generator in response to the temperature relation with solution therein, regulating flow of heating of strong solution leaving the generator, flash-cooling refrigerant in the evaporator, absorbing the flashed vapor in the solution in the absorber, purging non-condensible gases from the condenser and the absorber and regulating the flow of solution through the system in response to the temperature of flash cooled refrigerant leaving the evaporator.

2,775,098. ICE CUBE MAKER AND CONTROL MECHANISM THEREFOR. David Earle MacLeod, Syracuse, N. Y., assignor to Carrier Corp., a corporation of Delaware. Application July 1, 1950, Serial No. 171,593. 19 Claims. (Cl. 62—7.)



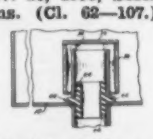
1. In an ice cube maker, the combination of a hollow ice forming element, a refrigeration system including a compressor, a condenser, a discharge line connecting the compressor and the condenser, an evaporator, a liquid line connecting the condenser and the evaporator, expansion means disposed in the liquid line and comprising capillary tubes, a suction line connecting the evaporator and the compressor, a first accumulator and a second accumulator placed in the suction line and said capillary tubes being disposed about the first accumulator, the evaporator in the refrigeration system being placed in contact with the ice forming element, means to pass a stream of water for ice formation through the element, a line connecting the evaporator with a portion of the refrigeration system containing heated refrigerant vapor, means in said line normally closing the line, opening of said means permitting heated refrigerant vapor to pass to the evaporator to harvest ice formed in said element.

2,775,099. SELF-CONTAINED ICE MAKING UNIT. Seymour W. Brown, New York, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application May 5, 1953, Serial No. 353,116. 1 Claim. (Cl. 62—106.)



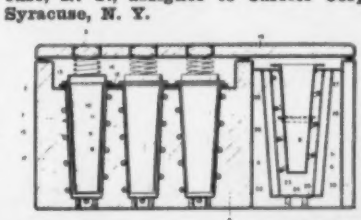
Ice making apparatus comprising a housing, a deck supported in the housing, said deck being provided with a plurality of openings therein, a container adapted to contain liquid to be frozen positioned in each opening, means for fixedly securing the top portion of each container to the deck, a refrigeration system including an evaporator disposed about the container for freezing liquid therein, means for overcoming the bond between the ice and the inner surface of the container, means for removing the ice after the bond has been overcome, a cover for each container and closure means including an elongated bar adapted to engage a plurality of the covers and clamping means arranged to exert a force on the bar sufficient to cause the covers to tightly engage the containers.

2,775,100. ICE MAKING APPARATUS. Harlan L. Howe, De Witt, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Nov. 20, 1953, Serial No. 393,431. 6 Claims. (Cl. 62—107.)



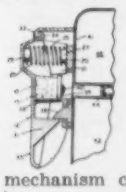
1. In combination with an ice making machine of the type wherein a formation of ice is produced as water flows, under the influence of a pump, through a circuit including a supply tank, water distribution means, and a refrigerated member having an ice forming surface adapted to receive water from the distributor, means for withdrawing from the circuit, a portion of the water returning to the tank, said means including an outlet pipe in communication with the bottom of the tank, an overflow pipe, a cap secured to the overflow pipe in spaced relation to the sides and top thereof, and a resilient mounting member having portions in engagement with both the overflow pipe and the outlet pipe for detachably securing the overflow pipe and cap in communication with the outlet pipe.

2,775,101. SELF-CONTAINED ICE MAKING UNIT. Lars Hanson, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. In an ice maker, the combination of a casing, a refrigerated chamber within said casing, a steam chest within said casing, and a partition within said casing separating the chamber from said chest, said chamber including a container for containing the liquid to be frozen and means for lowering the temperature of the liquid so as to form the ice, said steam chest including a receptacle to receive the container of said chamber, a steam coil disposed about the interior walls of the receptacle, said coil having spray means adapted to supply steam over the exterior surface of said container to thaw the ice from said container.

2,775,111. FREEZER LOCK. Kenneth W. Savage, Grand Rapids, Mich., assignor to Crampton Mfg. Co., Holland, Mich. Application Dec. 10, 1954, Serial No. 474,425. 2 Claims. (Cl. 70—9.)



1. A lock mechanism comprising: a housing having a mounting surface, an opening, aligned bearing means disposed on opposite sides of said opening on a single axis substantially parallel to said mounting surface, said bearing means being radially open over at least 180 degrees on the side thereof facing said mounting surface, said housing also having a stop adjacent an edge of said opening which is parallel to said axis, and a shelf portion; a bolt member formed to be received in said opening and having journal portions normally engaging said bearing means, said bearing means being spaced from said mounting surface sufficiently to receive said journal portions, and said bolt member also having a portion disposed to engage said stop on rotation of said bolt toward locking position, a keeper engaging portion, and a handle portion both remote from said axis and on the opposite side thereof from said stop, and locking means including a bar moveable to a position opposite said shelf to prevent rotation of said bolt member about said axis, said housing being formed to receive said bolt member into said opening from a lateral direction with respect to said mounting surface to engage said bearing means and journal portions; and compression spring means acting between said shelf portion and a point on said bolt to rotate said bolt about said axis against said stop.

(To Be Continued)

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FRICK 250 ton refrigeration capacity air conditioning Freon-12 chiller, condenser, and two 13½" by 9" 400 r.p.m. compressors with motors and starters for 208V 3ph 60 cy. Price $3,000.00 all in good condition, but being replaced by larger equipment. TEZEL & COTTER AIR CONDITIONING CO., 1026 W. Ashby Place, San Antonio 1, Texas.

BUSINESS OPPORTUNITIES

SELLING DUE to illness, parts and accessories business, for refrigerators, washing machines—ranges. Hours 9-5 daily, long lease. Brooklyn, N. Y. Gross $35,000.00. Price $17,000.00. Cash and terms to responsible experienced party. Principals only. Write or phone JOHN AVRUTIS, Atty., 225 Broadway, New York City, N. Y. BA-7-3040.

FRANCHISES AVAILABLE

CHRYSLER AIRTEMP dealer franchises available in Miami, Key West, and adjacent cities. Good opportunity for dealers wishing to relocate in a year-round market. Write AIR CONDITIONING DISTRIBUTORS, 763 N. E. 79th Street, Miami, Florida.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

"King Zeero's" Sweet Water ICE BANKS offer
ICE-CONCENTRATED Refrigeration for Air Conditioning

CONTINUOUS RIFLED GALVANIZED COILS
EXPANSION VALVE CONTROLLED

32°-34° COLD ICE WATER

DESIGNED FOR USE WITH: FREON METHYL CHLORIDE — AMMONIA

The "King Zeero" ICE BANK is designed for air cooling in Churches, Mortuaries, Theatres, Offices, Stores, Auditoriums, Factories, Clubs, Restaurants, etc. Ice Banks may be added to existing systems for increased capacity. The "King Zeero" ICE BANK is designed to deliver 32° to 34° F. sweet water for recirculation through secondary equipment. Design temperatures may be obtained with mixing valves.

MODEL A-7
"KING ZEERO"
ICE BANK

CONSIDER THESE ADVANTAGES--

- DIRECTED COURSE OF WATER travels with "built-in" agitation.
- NO MECHANICAL AGITATION REQUIRED.
- LARGE WATER COMPARTMENTS spaced on 11" and 12" centers.
- 33⅓ EXTRA ICE CAPACITY safely attained with up to 300 G.P.M. water flow.
- ICE IS "BURNED OFF" PLATE COILS progressively, exposing prime and secondary surface for maximum flash cooling capacity.
- ICE THICKNESS automatically controlled - eliminates "freeze ups."
- 94 SIZES to fit space requirements. Other designs for special applications.

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

THE KING ZEERO COMPANY
4302 W. Montrose Ave., Chicago 41, Ill.

MAIL COUPON TODAY
King Zeero Co., 4302 W. Montrose Ave., Chicago 41, Ill
☐ Please send me your new ICE BANK Catalog.
Name _____
Address _____
City _____ State _____

W. A. LAKE

G. T. LONG

Carrier Names--

(Concluded from Page 1, Col. 4)

be in charge of the division's field selling activities.

Under the division's new sales organization, Long will be in charge of headquarters activities such as application engineering, technical and distributor services, sales training, business consulting and order departments.

Lake will be responsible for the divisional field sales staff and the distributor-dealer organization.

Colonial Vendors--

(Concluded from Page 1, Col. 4)

cost of approximately $10,000, according to W. L. Paradise, industrial engineer with Colonial's development department. They were made by two firms, Stallworth-Lehigh Vending Machine Co., New York, and Rowe Mfg. Co., Whippany, N. J. The aluminum housing unit that encloses all six machines was built in Atlanta by Colonial Stores. Two automatic change makers are provided, it was pointed out.

Although the machines have been installed on a test basis, Paradise said, they were constructed with permanency in mind.

A Colonial Stores spokesman in Atlanta indicated that the firm has no plans for general installation of outdoor vending machines at its stores at this time, pending outcome of tests on the Durham store installation.

Portland Store Has 2 Outdoor Vendors

PORTLAND, Ore.—Two outside Vari-Vend vending machines have been installed by a recently-opened supermarket here. The store plans to add a third to provide 48 different foods on 24-hour service.

Food King supermarket's refrigerator vendors are serviced from the store and daily sales records kept. Public reaction has been good so far, it was reported. Prices for items sold are the same as charged in the market.

Several kinds of packaged meat, cottage cheese, eggs, margarine, cheese, and quart and half-gallon containers of milk are among refrigerated products vended.

Frigidaire To Hold Detroit Service School April 15-19

DETROIT — Another five-day service school, covering the fundamentals of refrigeration, will be held here, April 15 through 19, it was announced by R. A. Wilkins, service manager of Frigidaire Sales Corp. Inquiries may be addressed to 13940 Tireman Ave., Detroit 28.

Urges Warm Air Dealer Group--

(Concluded from Page 1, Col. 2)

"We need more fighters in this industry today than we have ever needed before," Nelson declared.

Such an organization, he suggested, could combat the prevalent public impression that heating dealers are "racketeers." This impression arises not only from the fact that a few unscrupulous firms give the whole industry a bad name, but from general ignorance about heating.

While the average homeowner can name the brand of every other appliance in his home, he rarely knows what brand furnace he owns.

"The public doesn't know a damn thing about the product you sell or your business today," he asserted. This, despite the fact that the heating industry predates by many years other well-known appliances that are household names.

One reason, he suggested, is that dealers seldom identify themselves in their advertising with the brand of furnace they sell and rarely carry such identification on their trucks.

Nelson particularly urged on the dealers "the moral obligation" to use the information they learned in their business.

"You have wasted your time and ours," he expostulated, "if you don't put into practice the methods of heat loss and heat gain calculations, the proper sizing of equipment, and the planning of air distribution you have learned here. This information has no value in your files. It is only worthwhile if it is used to benefit somebody—the consumer."

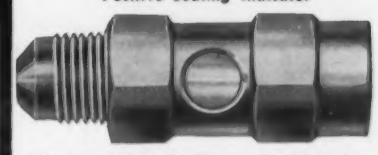
Nelson reported that NWAHACA's mobile field laboratory has found that 80% of the homes it has studied did not have heat loss calculated correctly. In 44% of these homes, no heat loss calculation was made at all.

Forty years ago, he related, it was the dealers who came to the furnace manufacturers and urged them to unite for the good of the industry. Today, it is the manufacturers who are asking you dealers to do the same thing, he said.

MASS PRODUCTION COSTS TOO HIGH?

Here's the ideal low-cost indicator for those hard-to-get-at places.

NEW "237" LIQUID EYE
Positive Sealing Indicator



(Illustrated 3/8" M. FL. x 3/8" FE. FL.)

The new Allin "237" has all the proved Liquid Eye features plus:
- smaller—more compact—dependable. (about 1/3'd smaller in the 3/8" male to female size than any previous unit).
- complete self-contained economy unit.
- new simplified design.
- available with 2 or 3 viewing ports.

Custom units can be made to your exact specifications. Consult Allin engineers now.

Write today for full information and catalog covering complete Allin line.

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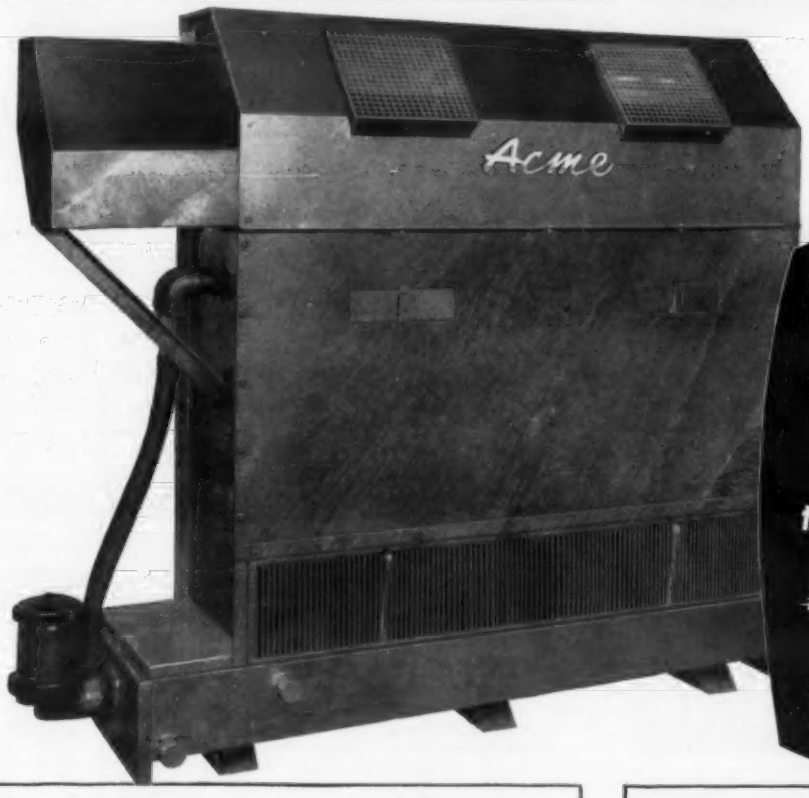
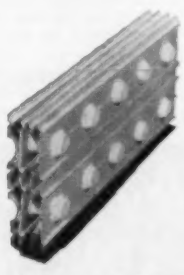
Over 1,000,000 Liquid Eyes Sold to Date!



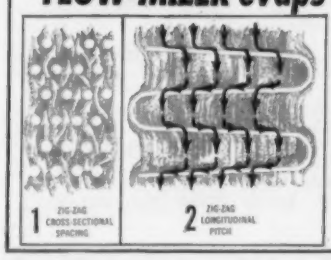
6 GOOD REASONS WHY you should specify the NEW Acme FLOW-MIZER® COOLING TOWERS and EVAPORATIVE CONDENSERS

1 New Plastic Pak weighs 90% Less in FLOW-MIZER TOWERS!



The new all-plastic Acme-Pak makes Acme towers lighter, more economical than ever. In an average unit (100-ton), the entire pack now weighs only 180 lbs as against 2300 lbs for a comparable steel pack! This means real savings on installations and on freight. Better still, it can never rot nor rust . . . . is cleaned more quickly, less frequently. Total savings are two-fold: lower installed cost, lower maintenance cost.

2 Zig-Zag coil spring means greater capacity, less HP in NEW FLOW-MIZER evaps



Acme's zig-zag spacing improves coil efficiency in two ways. (1) By staggering the tubes, air and spray water travel a longer zig-zag path, effecting greater turbulence and better heat transfer. (2) By sloping the tubes longitudinally, spray water remains in longer contact with each tube. Also, the condensed refrigerant drains more rapidly. The result is more efficient evaporation . . . which means more capacity in less space with less blower hp.

3 Twice as much surface protection

Acme's hot-dip galvanizing *after* fabrication deposits twice the thickness of zinc that ordinary electroplating does. This double protection against rust leaves no surface exposed. Units never need painting.

4 Easily serviced external sump

On both cooling towers and evaps, Acme's external sump provides quick easy access. Sediment screen, float valve, and water treatment facilities are reached by lifting the cover.

5 Full access to coil or pak

For fast, easy maintenance, the new Acme units offer convenient access to nozzles, eliminators, pack or coil by removal of full-width panels front and rear. Sliding doors provided for quick inspection.

6 Balance where it counts

After final assembly, All Acme blower units are now electronically balanced to assure quiet, smooth operation at all times . . . less wear on blower bearings . . . greater efficiency . . . longer trouble-free service.

New Acme Catalogs, Nos. 311 and 361 give full details. Write for them today.

ACME AIR CONDITIONING REFRIGERATION

Acme INDUSTRIES INC. Jackson, Michigan

Manufacturers of Quality Air Conditioning and Refrigeration Equipment since 1919

For more information about products advertised on this page use Information Center, page 31.